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THE BUILDER

Contents.

	PAGE
THE TRAINING OF A FRENCH ARCHITECT	1
CHURCH FURNITURE AND ARRANGEMENT	4
NOTES	5
THE WASTING OF IRON	7
ALTERATIONS AT DRURY-LANE	9
ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS	9
ST. JOHN'S HOSPITAL, LICHFIELD	11
NOTES FROM SCOTLAND	11
GOODS SUPPLIED BY OWNERS	12
THE LONDON COUNTY COUNCIL	12
APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894	13
CORRESPONDENCE:—	
SANITARY SCIENCE AND THE FRANCO-BRITISH EXHIBITION	13
MEETINGS	14
FIFTY YEARS AGO	14
COMPETITION FOR A BALUSTRADE TERMINAL	14
ARCHITECTURAL SOCIETIES	14
ENGINEERING SOCIETIES	14
ILLUSTRATIONS:—	
INTERIOR, SIENA CATHEDRAL	14
RENAISSANCE AND MODERN CHURCHES OF PARIS	14
NEW BRIDGE, GOVERNMENT OFFICES	15
LEGAL COLUMN	15
WESTMINSTER CITY COUNCIL	16
COURT OF COMMON COUNCIL	16
PROPOSED NEW BUILDINGS IN LONDON AND SUBURBS	17
COMPETITIONS	17
TRADE CATALOGUES	17
OBITUARY	18
GENERAL BUILDING NEWS	18
SANITARY AND ENGINEERING NEWS	19
MISCELLANEOUS	20
LAW REPORTS:—	
ACTION BY THE WESTMINSTER CITY COUNCIL	22
SUBSIDENCE OF HIGHWAY	22
PATENTS	22
LIST OF COMPETITIONS, CONTRACTS, ETC.	23
SOME RECENT SALES	26
PRICES CURRENT	27
TENDERS	28

Illustrations.

INTERIOR, SIENA CATHEDRAL. FROM A DRAWING BY MR. A. C. CONRADE.

RENAISSANCE AND MODERN CHURCHES OF PARIS, VII.: SAINT PIERRE DE MONTROUGE. FROM A PHOTOGRAPH.

NEW BRIDGE, GOVERNMENT OFFICES. FROM A PHOTOGRAPH.

Illustrations in Text.

	PAGE
THE TRAINING OF A FRENCH ARCHITECT:—	
DESIGN FOR FAÇADE COMPOSED OF PROJECTING AND RECESSED PORTIONS. BY M. BRONGNIART, PUPIL OF M. CHIFFLOT	2
DITTO. BY MR. A. R. COBB, PUPIL OF M. CHIFFLOT	3
ST. JOHN'S HOSPITAL, LICHFIELD	11
PLAN OF SAINT-PIERRE DE MONTROUGE, PARIS	15

The Training of a French Architect.

THE education of a French architect in connexion with the Ecole des Beaux-Arts, at Paris, divides itself naturally into four sections :—

1. Preliminary work.
2. Second class at the school proper.
3. First class at the school proper.
4. Diploma and Prize work.

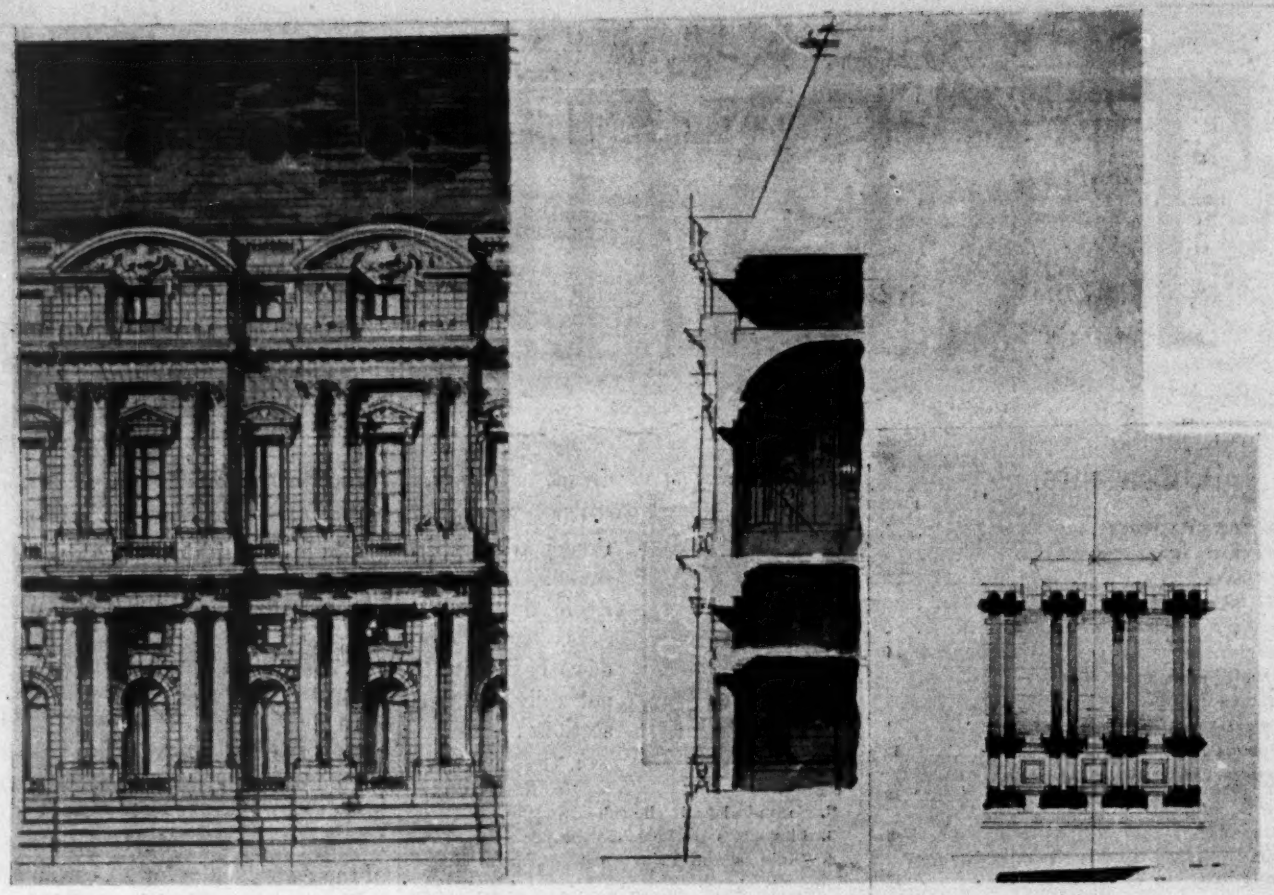
The first of these sections represents the training which a student must go through on leaving school, in order to enable him to pass the entrance examination of the Ecole des Beaux-Arts. The second and third sections are the period which he spends in the "Ecole" itself, corresponding to a university course. The Diploma is taken after the student leaves, although a certain qualification (which in this country would take the form of an examination to be passed on leaving the school) in work done while at the school is necessary before he can attempt to take the Diploma. The Prize work in certain instances, although it is outside the regular curriculum, counts as part of the Diploma course. The Prix de Rome, of course, is not a prize of the Ecole des Beaux-Arts at all, but is offered by the Institut de France, and is open to the whole country. The prize, however, is worked from the Ecole des Beaux-Arts, and in practice it is invariably one of its students that wins it.

In the present article we do not intend to enter into a detailed description of the time-table and general course pursued, but rather to give a general idea of the method in which the students work and their attitude towards the school; both interesting to us as being essentially different from what we find in this country. The whole conduct of the school, in fact, is typical of the French mind in its mixture of freedom and exactitude—freedom on the part of the students and the conditions under which they work, and exactitude on the part of the examining or official body. Everything that a student does is registered by a system of the utmost minuteness and elaboration, so that the whole of his course there is one long examination, or, rather, it might be said that their instruction *is* their examination. Instead of working for a year and then having a big examination at the end, for which the student spends his last few months reading up and cramming, he is continually being examined without being aware of it.

In this article, therefore, it will be rather the free life of the student and the purely architectural or designing side of his work that will be described, leaving the more minute discrimination of their work and a formal account of the course for another article. And before proceeding, it must be remembered that the Ecole des Beaux-Arts is an advanced or secondary architectural school. It does not attempt to teach the elements of its principal subject, *i.e.*, design, which it considers the student should have mastered in some previous school, just as an ordinary arts student at a University has a fair knowledge of Latin or history before he takes them up in a more advanced form for his degree.

The entrance examination (which will be described later) is a severe one. We reproduce two illustrations of a design subject, which a student must satisfy his examiner in before he may sit for the remaining part of the examination. As can be easily seen, the draughtsmanship (with all those qualities of French draughtsmanship which are so characteristic) is already quite assured; and when it is realised that these sketches are the work of twelve hours only, without warning beforehand as to subject, we think it will be recognised that the knowledge of architectural design shown is considerable. The designs here reproduced are from an entrance examination held during 1907. The subject set was a portion of a façade with alternate projecting and recessed features. In the handling of both these designs there seems to be no hesitation or fumbling—at any rate, in the accepted designs. In fact, when the French students enter they are about as proficient as a student when he leaves one of the architectural schools of England.* The nearest approach to this preliminary work in this country

* *i.e.*, the day courses—not the evening courses which a student often attends after he has entered an office.



Design for Façade Composed of Projecting and Recessed Portions. By M. Bronguiart, Pupil of M. Chiffot.

would seem to be the two years' studio course at the Liverpool University School of Architecture, where the handling of simple subjects in classic style is used as the basis of design, and the students actually begin their first design or "project" during their first year.

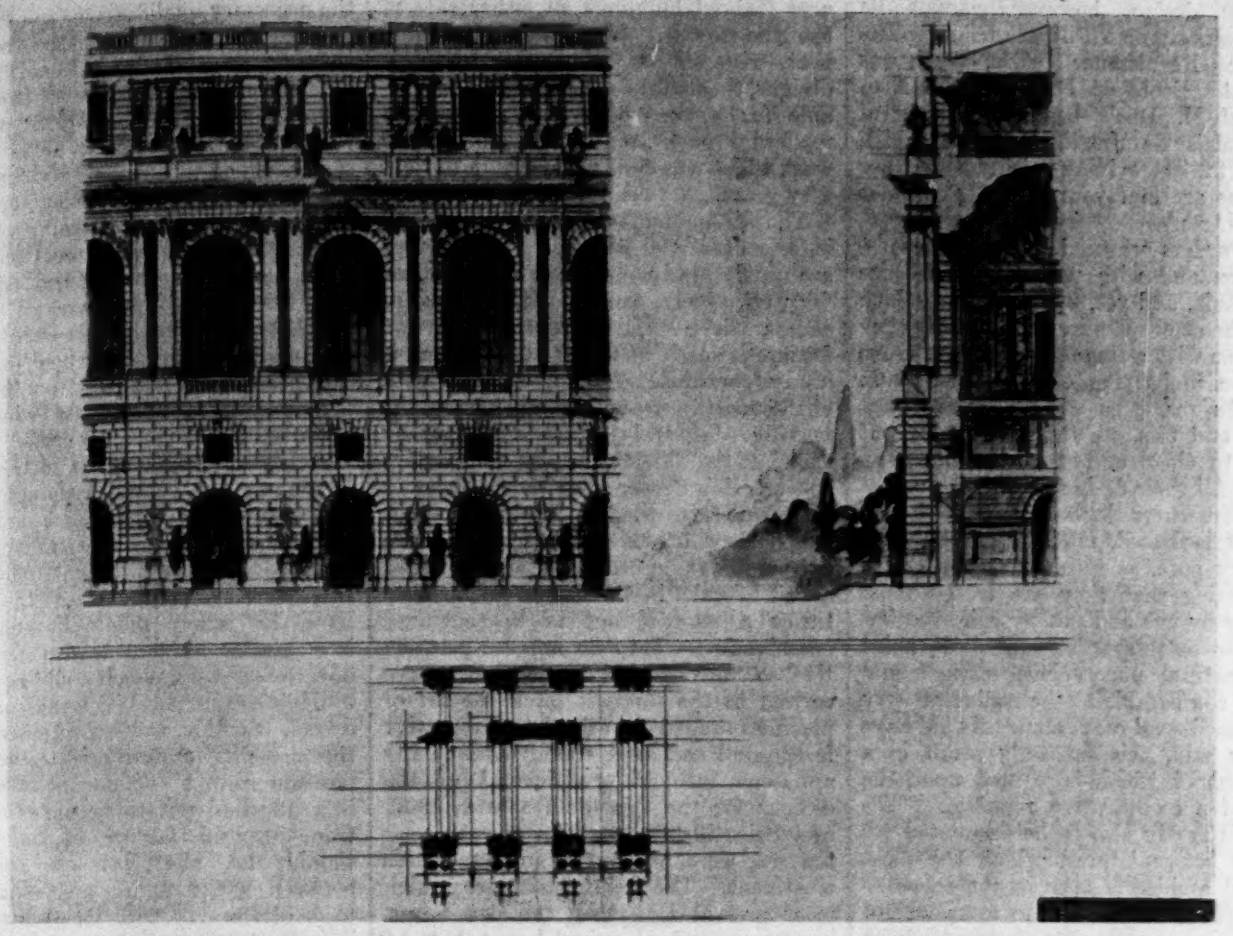
The French student, when he enters the Ecole des Beaux-Arts, becomes a member of the second class, and he finds himself working on an exact equality with those already there; the work not being graduated on a rising scale of difficulty. The instruction on the purely architectural side is given by a series of subjects which are set somewhat on the lines of a competition. They are called *concours*, and are of two sorts, set alternately. The more important are called *concours sur projet rendu*, which is rather difficult to translate, but virtually means a competition on a scheme which has to be sent in by a certain date, adhering to a sketch already submitted. The method of working them is as follows:—The student presents himself at the school, has a "programme" (or we should say, "conditions") given to him, and he has to make a sketch design *en loge*, that is to say, in a sort of cubicle, where he is isolated from contact with his fellows. No preparation in the subject is allowed. The ordinary time for most subjects is twelve hours; the sketch then has to be sent in and judged. Those who are considered worthy are allowed to proceed with the *projet*, which has to be sent in completely drawn out at the end of two months.

The other form of *concours* does not get beyond the twelve-hour sketch stage, when the designs are judged as they then stand. These are called *concours sur esquisse* (sketch). This, naturally, produces very different results in the sketches for the two sorts of *concours*. Then the *concours sur esquisse* are rough, of course, but finished works with as much detail as can be crammed into the time; and they are generally of the same type of subject. In the second, or junior, class, they are exercises in planning with the barest indications of elevational treatment; in the first, or senior, class, the subject is always purely decorative.

This alternation of short sketch subjects and long period *projets* is of the greatest value in architectural training, thus teaching both the methodical working out of a complete scheme, and the quick grasping and dealing with a sudden problem in design. Excellent, also, is the idea of keeping the sketch subjects of the junior class to planning; planning, of course, not meaning the commercial planning of schools or libraries—teaching them how much space to allow for desks, etc.—but the treatment of monumental masses on plan, the laying-out of a great *place*, or some grouped building.

The sketch in the *projet rendu* subject is, frankly, only a means to an end, and it is the whole object of the student to keep it as vague as possible, so as to allow him the greater freedom afterwards in working it out. There are numerous well-known subterfuges which are indulged in, such as dashing in a rough curved stroke for the window-heads, which may be taken to represent either a flat lintel or an arch. The skill consists in just escaping from being thrown out of the *concours* for a neglectful sketch, and at the same time not to trammel oneself as to detail. The cubicles in which these sketches are done are rather like the stalls of a stable; strict silence is supposed, but, as a matter of fact, there is a continual uproar of singing, whistling, and talking; no break is allowed for meals, during which notes might be compared. In general these sketches are a rough indication of the grouping, and little else.

After the confinement of the *esquisse en loge* the freedom of the student begins. He may literally work out his scheme where he likes, but in practice he generally attaches himself to a studio, or *atelier*. There are three studios in the actual "Ecole" buildings, to which eminent architects are appointed as professors. M. Louis Bernier, the architect of the Opéra Comique, is one of them. These three studios are *libre*, or without fees, but the majority of students prefer to be in one of the outside studios, so as to be more free in their life, although they have to share the cost of the studio. The formation of these outside studios rests entirely with the students themselves; any number of students could join together, hire a studio, and invite any architect whose work they happened to admire to act as their professor. In point of fact, these studios have, most of them, been in existence for some time, and nearly all the best-known architects of Paris are connected with the Ecole des Beaux-Arts in this way. The students are always spoken of as pupils of these professors, but they are not pupils in any similar sense to our use of the term. That is to say, they are not in their architect's office, and they see none of his private work, but they benefit from his criticisms upon the designs which they are working out from their own sketches. In one well-known studio the Professor (one of the foremost living architects), a precise and formal man (in exact contradistinction to his architecture), appears in the studio once



Design for Façade Composed of Projecting and Recessed Portions. By Mr. A. R. Cobb, Pupil of M. Chiflot.

a week. Immediately all the hubbub stops dead, and in complete silence the Professor sits down at a table, and the designs are brought before him. Stroking his beard, he looks keenly at the drawing. "*Cela ne s'arrange pas*," he says, putting his finger on a weak spot on the plan, and then, with a stroke or two of his pencil, he solves the problem that has been puzzling half the studio for the last three days. A few minutes is enough for each drawing, and he is gone for a week.

Besides the criticism of the Professor, the students help, advise, and criticise each other's work. The first and second class all work together, and the influence of the strongest head—the over-man of the studio—is always felt. This is all the actual instruction in design they ever get, besides learning from seeing how their designs are placed when they are judged. These methods would not be possible except in a very large school—there are 200 architectural students altogether—with a solid body of definite architectural opinion and taste all bearing in the same direction. There are no off-shoots in all directions as with us—no Neo-Grecians, Tudor-Goths, Bricks-and-mortar Domestics, Early Florentines, and Late Georgian-Adamites among them, but they are all members of one school with a common method of self-expression.

The *atelier*, or studio, is entirely managed by the students themselves. The chief officer is the *massier*. The *sous-massier* is the treasurer; the subscription of about 20 francs a month covers the fee which is paid to the professor and the rent of the studio. Then there is the librarian and the *caporal-cochon*, whose duty it is to look after the freshmen. Noise, uproar, continual joking and *blague* go on in the *atelier*, which would make an Englishman, who always inclines somewhat to the schoolmaster, think that no work was being done. But the Gallic excitable temperament must find some outlet after this manner, and it does not seem to interfere with the amount of work which they get through.

One excellent result of the *atelier* system is the incitement to work through rivalry between the various studios; the desire to get as many distinctions as possible in the awards of the competitions. There is the greatest excitement when the time approaches for a *projet* to be sent in. The expression "*être en charette*," which is the slang phrase for working at full blast, is derived from the mad rush from various parts of the *quartier* at the last minute with the drawings on a hand-cart (*charette*). And a hand-cart is necessary, for the drawings are often immense—5 or 6 ft. long is not at all unusual.

The sets are not placed in order, but *mentions* and *médailles* are awarded, to which certain *valeurs* (not of money) are attached, which are taken into account by the examining body.

The students of the second class cannot pass into the first class until they have obtained a certain number of these distinctions, or values (which will be described in the next article). Two years is about the shortest time in which a second-class student can obtain sufficient *valeurs* in order to pass into the first.

The freedom of the school is further shown by the fact that the students have not to take these *concours* in the order in which they are set, but they may wait for a subject which suits them; always remembering, however, that they cannot pass into the first class until they have obtained the requisite number of distinctions. The number of *projets* which receive these distinctions is not large; sometimes only two or three out of all the sets sent in. There is, in fact, nothing to prevent a student slacking as much as he pleases, except that he must send in *one projet* a year. Similarly, he may take his building construction and history (in regular courses of lectures given at the school) whenever he chooses; the general arrangement which is adopted being to devote the second year in the second class to construction, which is therefrom called *l'année de construction*.

During their course at the school, the students see no practical work whatever, nor do they bother their heads with going to look at work in progress, unless it be some elaborate piece of sheer engineering, such as the laying of underground tubes. They consider that one year is enough to get into touch with practical affairs after they have left. Indeed, their architectural training is based on the most advanced liberal and generalised lines. The construction and scientific side is exceedingly elaborate, but highly theoretical. In a word, it is in no sense a technical school, nor yet a place for cramming youths with odds and ends which may happen to be useful when they are in practice for themselves. But the whole subject is treated in its broad artistic and scientific sense, according to the best traditions of a university training.

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Their design, however, cannot be called strictly and drily academic. The severer Renaissance style, such as Soufflot's Ecole de Droit, or the Neo-grec of M. Duc's beautiful façade of the Palais de Justice—a style which seems to be reviving with us—neither of these are in favour at the Ecole des Beaux-Arts.

The orders are used with the greatest freedom, and with no precise reference to Vignola, and yet, by an instinct which is in the atmosphere of the school, they use them with a singular propriety. One feels an underlying classical essence in their designs, even when they are most florid, and this, we think, must be put down to their unity of conception on plan. All their designs are by no means good, but where the orders are used they are not lacerated, mauled, and bleeding at every pore, as so often seen with us. Considering that they are used almost entirely by eye and not by rule, the few mistakes in proportion and scale point to a natural unconscious instinct and feeling comparable to the native artistry of the mediæval craftsman. As we have already said, this can only result in a large school which is worked upon the basis of a co-operative republic. This result is partly also to be accounted for by the active interest which the most eminent architects take in the school—not paying casual visits in rotation and bewildering students by contrary advice given by different experts, but becoming attached to a certain number of students and advising them throughout their course. The subjects of the *concours*, it is true, are set by one man, M. Guadet, the *Professeur de théorie*, who has a kind of genius in this direction, and they are judged by a jury of architects; but the intermediate advice, which is of the greatest benefit to the students, is given by the first architects of France to their particular pupils.

Among their other disregards of practical work is one which does not seem to us so justifiable. This is their neglect of the measuring of old work. Curiously, this is the one thing with which they credit English students, whom they imagine, as a rule, to be entirely uneducated architecturally. It is certain that we do a great deal more measuring than they do, and in the Liverpool University course at least one important piece of measured work (such as one of the blocks of Greenwich) is required, to obtain the certificate. The French students, however, think measuring a waste of time, although they use books freely. The experience of their professor is supposed to be sufficient to safeguard their making mistakes as to increased boldness of detailing as the buildings go up higher; this we feel a student best learns by doing the measuring himself, and comparing the apparent clumsiness of the full-size detail when looked at close with its delicate and yet not wiry appearance when seen at its right distance from below. We are certain that the main proportions and massing are more fully grasped by a student when he has measured and drawn them out himself than by using other people's work in a book. We think that it would do none of the students at the Ecole des Beaux-Arts any harm to measure the Perrault façades of the Louvre, or the two magnificent Gabriel buildings on either side of the Rue Royale. We cannot help feeling that, with all our admiration for their designs, this lack of measuring is accountable for a want of sympathy between modern French architecture and all the work which was done up to within the last fifty years.

The draughtsmanship of the school is, of course, well known. The drawings are nearly always in pencil and coloured very effectively, though with the use of comparatively quiet tones. A great feature is made of the shading, which is always accurate, though treated with characteristic freedom; such as the making a central feature stand out by showing the shadows under the cornice considerably denser than the shadows to the two side wings. The importance which they attach to shadows is even carried to an unnecessary length, when a bad mistake in shading is sufficient to throw a student out in his entrance examination. They do not use perspective so much as we do, but they have carried to the furthest pitch the art of placing a shaded elevation in a perspective foreground and background without any apparent incongruity. Several of the designs for the Prix de Rome in 1907, of a Scientific Observation Station near the sea, were brilliant examples of this treatment. The great insistence which is at present laid upon the paramount importance of planning has led to a special development of plan drawing, which they try to make as interesting as the drawing of the elevations. The effect which they aim at producing is as though one were up in a balloon and were looking down upon the building with its roof off and with its setting of gardens and trees.

The preliminary schools are based on similar principles to the school proper. Certain practising architects have studios for this purpose, but in this case the initiation of the studios comes from themselves, and not from the students. The architect visits his studio rather more frequently than the Professors of the school *ateliers*, but probably not more than twice or three times a week. The instruction here also is largely by dint of one student helping another. They draw out the orders and learn the art of draughtsmanship, and especially shading, the whole object being to work up for the entrance examination to the school. To this end they begin as soon as possible upon small *projets* themselves, but the method of conducting these varies, of course, in the different studios.

The ages at which students enter these preliminary studios vary a good deal. Fifteen or sixteen is the earliest, but this is generally looked upon as too young, as their general education has to be curtailed if they are to enter at this age. If a student begins at eighteen he should pass into the Ecole des Beaux-Arts at twenty. The minimum time in which he can get through the work required of him in the second class is two years; three years is the more usual time, as there is so much work outside the regular architectural *projets*; a similar period will be necessary for the first class, which is almost entirely occupied with design. From this it will be seen that a student rarely leaves the school with the necessary qualifications to enable him to take the diploma later on, before he is twenty-six. He is then ready to enter an office as draughtsman. If the student is going in for any of the great prizes, he will probably stop until he is at least thirty, which is the age limit for leaving the school. This is a great contrast to the English haste to be earning a salary as a draughtsman as a means of picking up some scraps of architectural education, after three years of pupilage.

What is wanted in this country is an advanced architectural school in London to which the best students from the four or five architectural schools which now exist in London, in Liverpool, and in Manchester, could go for a further period of four or five years, as though it were a post-graduate course at a university. There should also be a certainty of their getting State employment when they left, if they distinguished themselves. How this school should be constituted is a matter for serious discussion, and how the existing schools could be brought into line as a preparation for this advanced school, teaching, as their primary object, the elements of pure architectural composition from a common point of view, is a question not to be answered here. One essential feature of the scheme should be the intimate connexion between the foremost practising architects of the day with the students who are about to succeed them as the next architectural generation.*

CHURCH FURNITURE AND ARRANGEMENT.

A COLLECTION of papers on this subject, by the late Mr. Micklethwaite, originally published in the *Church Builder* during the years 1899-1905, is now reprinted at the request of his friends.† Had they been accompanied by suitable illustrations and slightly expanded they would have formed a volume which no library or architect could afford to be without. In their present unpretentious form it is to be feared that they will not receive that attention which they merit. Mr. Micklethwaite was an architect and an archæologist of great distinction, and brought to bear upon the practical question of church building a shrewd common sense and sound historical scholarship not always the attributes of church architects. Certainly all architects, and those interested in church building and church furniture especially, should possess this collection of papers; their only fault (and it is one more noticeable to the reviewer than the general reader) is the want of sequence in the arrangement of the subjects.

The arrangement of the church is of primary importance, and the sound advice contained in the paper on "Motive" in church planning is very seasonable. Mr. Micklethwaite insists (as we have always insisted) that a church is neither a lecture-room nor a music-hall; though it must be suitable for both sermons and music, primarily it must be a building suitable

* The illustrations are taken from reproductions of drawings published by Auguste Vincent, of 4, Rue des Beaux-Arts, Paris.

† "Occasional Notes on Church Furniture and Arrangement." By J. T. Micklethwaite, F.S.A. Reprinted 1908. The Incorporated Church Building Society, 7, Dean's-yard, Westminster.

for public worship as set out by the Book of Common Prayer. The papers on "Cheap Churches" and that on "Degradation" should be widely read and taken to heart by architects and by building committees; both papers show courage and honesty beyond all praise in saying that which it is not always easy or convenient to say. Writing of the tendency towards experiment in church planning in the paper treating of "the Basilican Plan," Mr. Micklethwaite says, "we may hope that as 'the younger men' grow older they will learn that it is better to go forward steadily in the old ways than to seek novelty in affectation or in mere fleeting fashion." That is well said; how often does genius consist in doing that which has been always done, better than it has ever been done before?

Next in importance to the plan is the roof, indeed the plan has in all ages been to a great extent governed by the roof construction; we therefore notice the paper on "Roofs and Ceilings" next, although there is not much in the paper dealing with pure design. With "Roofs and Ceilings" we may bracket paper No. 13, on "Warming Churches," as this is more the point of view which the author treats of; the roof and the temperature of the building are more closely connected than is usually considered to be the case. However good the system of heating employed, and however intelligently it is managed, a thin or badly constructed roof will render artificial heating abortive; indeed, it is no exaggeration to say that no system at all is better than a bad system; warmed air rises by its comparative lightness, and meeting the roof surface is chilled, and descends in cold currents in the form of draughts. For this reason Mr. Micklethwaite advocates the ceiling in of church roofs, thus forming a neutral air space between the inner and outer atmosphere.

It is pleasant to find deal, in its natural colour without stain or varnish, recommended when hard woods cannot be afforded; it has a very pleasant colour when new, and it mellows delightfully. Though the author deprecates open timber roofs on the score of heating and ventilation, we know of a roof covered with deal boarding 1½ in. thick which is said to be a success; in this case the purlins were placed near together and no rafters were used.

The best system of heating naturally varies with the size and construction of the church. Paper 13 describes the systems and their abuses; the most important point which he makes, and which experts are now agreed upon, is that some part of the heating surface should be at a high level, so as to warm the descending air before it reaches the heads of the congregation below; it must be remembered that this descends from the windows as well as from the roof. The building referred to above was heated in this way, there being a flow and return to each side of the building, the flow being 16 ft. from the ground, and the radiators under the windows take off the return in trenches.

The second paper deals with "Chancel Levels and Steps." The author's protests against the undesirable elevation of the choir above the nave is not now so necessary as it was some years ago; it is now more generally recognised that variety of levels does not necessarily add to the dignity of a church, and that the steps are both unnecessary and inconvenient. Mr. Micklethwaite says "taking away one step from the west of the choir desks will do more good than adding two east of them," the raised choir, of course, forming a barrier between the worshippers and the altar.

The paper on "Pews" gives the information necessary to their right design and spacing, as well as describing their origin and development, and puts the question of seats *versus* pews in a nutshell; this is one of the articles where illustrations would have added greatly to the value of the paper. That on "Fonts" discusses the materials most suitable for their construction; "a judicious designer will not use more than one material in a font, and if he uses marble, he will do well to use the same for the steps where it can be afforded." Baptism was originally an occasion of great publicity—a rite administered during divine service "when the most number of people come together"; consequently the right place for the font is in the nave, and not in an obscure corner or in a recess, a poor imitation of the Italian Baptistery.

NOTES.

Birthday Honours.

As is usually the case, the claims of artistic merit are entirely ignored in the list of Birthday Honours. Literature is to some extent recognised in knighthood conferred upon two editors; Dr. Murray, the editor of the "New English Dictionary," and Mr. Percy Bunting, the editor of the *Contemporary Review*. Art is only recognised by a knighthood conferred upon Mr. J. J. Duveen, the donor of the new wing to the Tate Gallery, who made the donation on the condition of his own architect being employed to carry out the addition to a building designed by another architect—a matter on which we have already commented. It is characteristic of the attitude of our Government towards art and artists, that honours in connexion with art are bestowed on those who give money to an art institution, rather than on those on whose original genius the art of the country depends.

The Electric Power Bills.

The decision of the House of Lords Committee on the London Electric Power Bills was announced by Lord Cromer last week. The London and District Electric Power Bill has been passed with certain slight modifications, which were introduced to meet objections raised by the London County Council. The company propose to supply London with electricity "in bulk" from a generating-station to be erected at Barking. They will supply railways, tramways, docks, canals, etc., with power for traction and motive purposes. They may also supply large private consumers with electric power provided the "authorised distributor" gives permission. If this permission be "unreasonably" withheld, then the Board of Trade has power to intervene. We are glad that sanction has not been given for the establishment of a Joint Committee of certain of the present supply companies. Such a committee would have left matters much as they are at present, as it is difficult to believe that competing companies would work harmoniously together. Permission, however, has been given to eight of the companies to "link" their supplies, and so effect the economies they claimed, and thus reduce the price to the consumer. Seeing that several of them generate electricity according to very different methods, it will be most interesting to see how far they will take advantage of their "linking powers." The Bills after being discussed in detail by the Committee, will be reported to the House of Lords for a third reading. Many of the arguments will probably be discussed over again in the Commons, but as the decisions of Lord Cromer's Committee have been favourably received we expect that they will be accepted. Londoners may reasonably hope, therefore, that in a few years the prices of electric supply will be notably reduced.

Forest Conservation in America.

We have reason to be thankful that the Government have caused the question of afforestation to be taken into consideration. Nevertheless, while our rulers are merely collecting data to think about, other nations already recognise the necessity for conserving and increasing their timber supplies, and are taking prompt action to attain those ends. The Forest Service of the United States are making efforts to maintain the timber supplies of that country by creating national forests, and by publishing recommendations on the best way of utilising forest resources. In a recent publication issued by the department it is stated that at the present rate of consumption, and taking no account of renewals which require a period of about thirty-five years for growth, the timber supply of the United States will be totally exhausted in fourteen years. This is a startling estimate revealing a position of much urgency in America, and suggesting the existence of similar conditions in other countries whence our supplies of timber are largely drawn.

Corrosion of Iron and Steel.

In a paper read before the Franklin Institute, Mr. G. B. Heckel gives particulars of two series of simple tests whose results clearly support the claim of Dr. Cushman that some compounds of chromic acid prohibit or largely inhibit the corrosion of iron and steel. The first series was performed by immersing small steel plates in samples of distilled water, one pure and the others charged with air and various gases likely to favour corrosion. Duplicate plates were immersed in water similarly prepared in order that the influence of electricity in promoting corrosion might be determined. At the end of thirty days it was found that considerable loss by corrosion had occurred, and that in every case the passage of an electrical current of 1½ volts pressure very materially assisted corrosion. Afterwards the plates were cleaned and the tests were repeated after potassium bichromate had been added in quantity sufficient to make a one per cent.

Their design, however, cannot be called strictly and drily academic. The severer Renaissance style, such as Soufflot's Ecole de Droit, or the Neo-grec of M. Duc's beautiful façade of the Palais de Justice—a style which seems to be reviving with us—neither of these are in favour at the Ecole des Beaux-Arts.

The orders are used with the greatest freedom, and with no precise reference to Vignola, and yet, by an instinct which is in the atmosphere of the school, they use them with a singular propriety. One feels an underlying classical essence in their designs, even when they are most florid, and this, we think, must be put down to their unity of conception on plan. All their designs are by no means good, but where the orders are used they are not lacerated, mauled, and bleeding at every pore, as so often seen with us. Considering that they are used almost entirely by eye and not by rule, the few mistakes in proportion and scale point to a natural unconscious instinct and feeling comparable to the native artistry of the mediæval craftsman. As we have already said, this can only result in a large school which is worked upon the basis of a co-operative republic. This result is partly also to be accounted for by the active interest which the most eminent architects take in the school—not paying casual visits in rotation and bewildering students by contrary advice given by different experts, but becoming attached to a certain number of students and advising them throughout their course. The subjects of the *concours*, it is true, are set by one man, M. Guadet, the *Professeur de théorie*, who has a kind of genius in this direction, and they are judged by a jury of architects; but the intermediate advice, which is of the greatest benefit to the students, is given by the first architects of France to their particular pupils.

Among their other disregards of practical work is one which does not seem to us so justifiable. This is their neglect of the measuring of old work. Curiously, this is the one thing with which they credit English students, whom they imagine, as a rule, to be entirely uneducated architecturally. It is certain that we do a great deal more measuring than they do, and in the Liverpool University course at least one important piece of measured work (such as one of the blocks of Greenwich) is required, to obtain the certificate. The French students, however, think measuring a waste of time, although they use books freely. The experience of their professor is supposed to be sufficient to safeguard their making mistakes as to increased boldness of detailing as the buildings go up higher; this we feel a student best learns by doing the measuring himself, and comparing the apparent clumsiness of the full-size detail when looked at close with its delicate and yet not wiry appearance when seen at its right distance from below. We are certain that the main proportions and massing are more fully grasped by a student when he has measured and drawn them out himself than by using other people's work in a book. We think that it would do none of the students at the Ecole des Beaux-Arts any harm to measure the Perrault façades of the Louvre, or the two magnificent Gabriel buildings on either side of the Rue Royale. We cannot help feeling that, with all our admiration for their designs, this lack of measuring is accountable for a want of sympathy between modern French architecture and all the work which was done up to within the last fifty years.

The draughtsmanship of the school is, of course, well known. The drawings are nearly always in pencil and coloured very effectively, though with the use of comparatively quiet tones. A great feature is made of the shading, which is always accurate, though treated with characteristic freedom; such as the making a central feature stand out by showing the shadows under the cornice considerably denser than the shadows to the two side wings. The importance which they attach to shadows is even carried to an unnecessary length, when a bad mistake in shading is sufficient to throw a student out in his entrance examination. They do not use perspective so much as we do, but they have carried to the furthest pitch the art of placing a shaded elevation in a perspective foreground and background without any apparent incongruity. Several of the designs for the Prix de Rome in 1907, of a Scientific Observation Station near the sea, were brilliant examples of this treatment. The great insistence which is at present laid upon the paramount importance of planning has led to a special development of plan drawing, which they try to make as interesting as the drawing of the elevations. The effect which they aim at producing is as though one were up in a balloon and were looking down upon the building with its roof off and with its setting of gardens and trees.

The preliminary schools are based on similar principles to the school proper. Certain practising architects have studios for this purpose, but in this case the initiation of the studios comes from themselves, and not from the students. The architect visits his studio rather more frequently than the Professors of the school *ateliers*, but probably not more than twice or three times a week. The instruction here also is largely by dint of one student helping another. They draw out the orders and learn the art of draughtsmanship, and especially shading, the whole object being to work up for the entrance examination to the school. To this end they begin as soon as possible upon small *projets* themselves, but the method of conducting these varies, of course, in the different studios.

The ages at which students enter these preliminary studios vary a good deal. Fifteen or sixteen is the earliest, but this is generally looked upon as too young, as their general education has to be curtailed if they are to enter at this age. If a student begins at eighteen he should pass into the Ecole des Beaux-Arts at twenty. The minimum time in which he can get through the work required of him in the second class is two years; three years is the more usual time, as there is so much work outside the regular architectural *projets*; a similar period will be necessary for the first class, which is almost entirely occupied with design. From this it will be seen that a student rarely leaves the school with the necessary qualifications to enable him to take the diploma later on, before he is twenty-six. He is then ready to enter an office as draughtsman. If the student is going in for any of the great prizes, he will probably stop until he is at least thirty, which is the age limit for leaving the school. This is a great contrast to the English haste to be earning a salary as a draughtsman as a means of picking up some scraps of architectural education, after three years of pupilage.

What is wanted in this country is an advanced architectural school in London to which the best students from the four or five architectural schools which now exist in London, in Liverpool, and in Manchester, could go for a further period of four or five years, as though it were a post-graduate course at a university. There should also be a certainty of their getting State employment when they left, if they distinguished themselves. How this school should be constituted is a matter for serious discussion, and how the existing schools could be brought into line as a preparation for this advanced school, teaching, as their primary object, the elements of pure architectural composition from a common point of view, is a question not to be answered here. One essential feature of the scheme should be the intimate connexion between the foremost practising architects of the day with the students who are about to succeed them as the next architectural generation.*

CHURCH FURNITURE AND ARRANGEMENT.

A COLLECTION of papers on this subject, by the late Mr. Micklethwaite, originally published in the *Church Builder* during the years 1899-1905, is now reprinted at the request of his friends.† Had they been accompanied by suitable illustrations and slightly expanded they would have formed a volume which no library or architect could afford to be without. In their present unpretentious form it is to be feared that they will not receive that attention which they merit. Mr. Micklethwaite was an architect and an archæologist of great distinction, and brought to bear upon the practical question of church building a shrewd common sense and sound historical scholarship not always the attributes of church architects. Certainly all architects, and those interested in church building and church furniture especially, should possess this collection of papers; their only fault (and it is one more noticeable to the reviewer than the general reader) is the want of sequence in the arrangement of the subjects.

The arrangement of the church is of primary importance, and the sound advice contained in the paper on "Motive" in church planning is very seasonable. Mr. Micklethwaite insists (as we have always insisted) that a church is neither a lecture-room nor a music-hall; though it must be suitable for both sermons and music, primarily it must be a building suitable

* The illustrations are taken from reproductions of drawings published by Auguste Vincent, of 4, Rue des Beaux-Arts, Paris.

† "Occasional Notes on Church Furniture and Arrangement." By J. T. Micklethwaite, F.S.A. Reprinted 1908. The Incorporated Church Building Society, 7, Dean's-yard, Westminster.

for public worship as set out by the Book of Common Prayer. The papers on "Cheap Churches" and that on "Degradation" should be widely read and taken to heart by architects and by building committees; both papers show courage and honesty beyond all praise in saying that which it is not always easy or convenient to say. Writing of the tendency towards experiment in church planning in the paper treating of "the Basilican Plan," Mr. Micklethwaite says, "we may hope that as 'the younger men' grow older they will learn that it is better to go forward steadily in the old ways than to seek novelty in affectation or in mere fleeting fashion." That is well said; how often does genius consist in doing that which has been always done, better than it has ever been done before?

Next in importance to the plan is the roof, indeed the plan has in all ages been to a great extent governed by the roof construction; we therefore notice the paper on "Roofs and Ceilings" next, although there is not much in the paper dealing with pure design. With "Roofs and Ceilings" we may bracket paper No. 13, on "Warming Churches," as this is more the point of view which the author treats of; the roof and the temperature of the building are more closely connected than is usually considered to be the case. However good the system of heating employed, and however intelligently it is managed, a thin or badly constructed roof will render artificial heating abortive; indeed, it is no exaggeration to say that no system at all is better than a bad system; warmed air rises by its comparative lightness, and meeting the roof surface is chilled, and descends in cold currents in the form of draughts. For this reason Mr. Micklethwaite advocates the ceiling in of church roofs, thus forming a neutral air space between the inner and outer atmosphere.

It is pleasant to find deal, in its natural colour without stain or varnish, recommended when hard woods cannot be afforded; it has a very pleasant colour when new, and it mellows delightfully. Though the author deprecates open timber roofs on the score of heating and ventilation, we know of a roof covered with deal boarding 1½ in. thick which is said to be a success; in this case the purlins were placed near together and no rafters were used.

The best system of heating naturally varies with the size and construction of the church. Paper 13 describes the systems and their abuses; the most important point which he makes, and which experts are now agreed upon, is that some part of the heating surface should be at a high level, so as to warm the descending air before it reaches the heads of the congregation below; it must be remembered that this descends from the windows as well as from the roof. The building referred to above was heated in this way, there being a flow and return to each side of the building, the flow being 16 ft. from the ground, and the radiators under the windows take off the return in trenches.

The second paper deals with "Chancel Levels and Steps." The author's protests against the undesirable elevation of the choir above the nave is not now so necessary as it was some years ago; it is now more generally recognised that variety of levels does not necessarily add to the dignity of a church, and that the steps are both unnecessary and inconvenient. Mr. Micklethwaite says "taking away one step from the west of the choir desks will do more good than adding two east of them," the raised choir, of course, forming a barrier between the worshippers and the altar.

The paper on "Pews" gives the information necessary to their right design and spacing, as well as describing their origin and development, and puts the question of seats *versus* pews in a nutshell; this is one of the articles where illustrations would have added greatly to the value of the paper. That on "Fonts" discusses the materials most suitable for their construction; "a judicious designer will not use more than one material in a font, and if he uses marble, he will do well to use the same for the steps where it can be afforded." Baptism was originally an occasion of great publicity—a rite administered during divine service "when the most number of people come together"; consequently the right place for the font is in the nave, and not in an obscure corner or in a recess, a poor imitation of the Italian Baptistery.

NOTES.

Birthday Honours. As is usually the case, the claims of artistic merit are entirely ignored in the list of Birthday Honours. Literature is to some extent recognised in knighthood conferred upon two editors; Dr. Murray, the editor of the "New English Dictionary," and Mr. Percy Bunting, the editor of the *Contemporary Review*. Art is only recognised by a knighthood conferred upon Mr. J. J. Duveen, the donor of the new wing to the Tate Gallery, who made the donation on the condition of his own architect being employed to carry out the addition to a building designed by another architect—a matter on which we have already commented. It is characteristic of the attitude of our Government towards art and artists, that honours in connexion with art are bestowed on those who give money to an art institution, rather than on those on whose original genius the art of the country depends.

The Electric Power Bills. The decision of the House of Lords Committee on the London Electric Power Bills was announced by Lord Cromer last week. The London and District Electric Power Bill has been passed with certain slight modifications, which were introduced to meet objections raised by the London County Council. The company propose to supply London with electricity "in bulk" from a generating-station to be erected at Barking. They will supply railways, tramways, docks, canals, etc., with power for traction and motive purposes. They may also supply large private consumers with electric power provided the "authorised distributor" gives permission. If this permission be "unreasonably" withheld, then the Board of Trade has power to intervene. We are glad that sanction has not been given for the establishment of a Joint Committee of certain of the present supply companies. Such a committee would have left matters much as they are at present, as it is difficult to believe that competing companies would work harmoniously together. Permission, however, has been given to eight of the companies to "link" their supplies, and so effect the economies they claimed, and thus reduce the price to the consumer. Seeing that several of them generate electricity according to very different methods, it will be most interesting to see how far they will take advantage of their "linking powers." The Bills after being discussed in detail by the Committee, will be reported to the House of Lords for a third reading. Many of the arguments will probably be discussed over again in the Commons, but as the decisions of Lord Cromer's Committee have been favourably received we expect that they will be accepted. Londoners may reasonably hope, therefore, that in a few years the prices of electric supply will be notably reduced.

Forest Conservation in America. We have reason to be thankful that the Government have caused the question of afforestation to be taken into consideration. Nevertheless, while our rulers are merely collecting data to think about, other nations already recognise the necessity for conserving and increasing their timber supplies, and are taking prompt action to attain those ends. The Forest Service of the United States are making efforts to maintain the timber supplies of that country by creating national forests, and by publishing recommendations on the best way of utilising forest resources. In a recent publication issued by the department it is stated that at the present rate of consumption, and taking no account of renewals which require a period of about thirty-five years for growth, the timber supply of the United States will be totally exhausted in fourteen years. This is a startling estimate revealing a position of much urgency in America, and suggesting the existence of similar conditions in other countries whence our supplies of timber are largely drawn.

Corrosion of Iron and Steel. In a paper read before the Franklin Institute, Mr. G. B. Heckel gives particulars of two series of simple tests whose results clearly support the claim of Dr. Cushman that some compounds of chromic acid prohibit or largely inhibit the corrosion of iron and steel. The first series was performed by immersing small steel plates in samples of distilled water, one pure and the others charged with air and various gases likely to favour corrosion. Duplicate plates were immersed in water similarly prepared in order that the influence of electricity in promoting corrosion might be determined. At the end of thirty days it was found that considerable loss by corrosion had occurred, and that in every case the passage of an electrical current of 1½ volts pressure very materially assisted corrosion. Afterwards the plates were cleaned and the tests were repeated after potassium bichromate had been added in quantity sufficient to make a one per cent.

solution. At the expiration of thirty days no rust appeared on any of the specimen plates, even the electric current having failed to induce corrosion. This is interesting testimony to the value of chrome compounds, but it should be noted that these vary considerably in their action. Dr. Cushman has already shown that while some—such as zinc chromate, lead chromate, and chrome yellow orange—are strong inhibitors of rust, others—such as chrome yellow lemon, chrome yellow medium, chrome green, and chrome red—actually stimulate corrosion. Thus the necessity for discrimination is evident, and we may add the caution that before accepting any approved variety of pigment evidence should be obtained as to its freedom from acids or substances likely to form acids.

Bridge Reconstruction at Magdeburg. AN important and difficult operation commenced in February, 1906, has recently been completed at the crossing of the Elbe by the Berlin to Magdeburg railway. This line was carried across the two arms of the river by a metallic bridge of fifteen bowstring girders, with the total length of about 2,000 ft. Built in 1871, the superstructure was not of sufficient strength for modern traffic, and has been replaced by a series of new spans resting upon the original masonry piers. Workshops were established upon the banks of the river for the assembly and completion of the new spans, and an elaborate system of falseworks provided staging on either side of the bridge for dealing with the new and old spans. The maximum time allowed for the replacement of each span was two hours, so that no interruption of traffic should be caused. In order to comply with this condition, each span in turn was hoisted upon the staging and its ends mounted on four carriages, and the old span, having been raised from its supports, was lowered upon similar carriages. Then, by hauling the carriages transversely to the axis of the bridge, the new span was brought over its supports and the old was transferred to the staging built for its reception. This, in brief, was the method adopted throughout which was accomplished without any hitch, and without any accident. As five of the spans measured 215 ft. long and the others 108 ft. long, the magnitude of the work is sufficiently evident.

Damp Chimneys. As the result of investigation into the effect of damp in the exposed walls of chimneys, Professor Nussbaum recommends the application of damp-resisting material on the outside of all such structures, and the addition of a weather-cap to exclude rain from the interior. No doubt it is the case that where moisture percolates into the brickwork much of the useful effect of the upward current of heated air is expended in the vaporisation of water, and that the cooling of a tall chimney on one side is liable to produce eddies such as impair the draught. Treatment of the kind advocated would not involve heavy outlay, and the cost would probably be covered in a comparatively short time by increased efficiency. We are afraid that the idea will not be generally adopted in this country, as most of those who build houses are not specially interested in the subject of draught efficiency, that being a matter coming more within the province of purchasers or tenants, as the case may be.

An Advance in Gas Lighting. AN economy of 50 per cent. in gas consumption is effected by a new Keith lamp, which is being used for lighting at the Edinburgh Exhibition and at the Franco-British Exhibition. This lamp has an efficiency of 70 candles per cubic foot of gas consumed per hour, whereas 35 candles per cubic foot has been the highest efficiency hitherto maintained in practice by the best high-pressure lamps. The new lamp is provided with an inverted mantle, and is supplied with gas under a pressure of about 2 lb. per square inch. The lamps are made in various sizes, the gas consumption ranging from 2 to 25 cub. ft. per hour. With the large burner, Mr. Herring, Chief Engineer to the Edinburgh Gas Commissioners, has obtained 1,655 candle-power with Edinburgh gas consumed at a rate of 22·9 cub. ft. per hour. The small burner, which consumes only 2 cub. ft. per hour, yields light of about 120 candle-power with London gas. The high pressure under which the gas must be supplied to the burner renders the lamp unsuitable for domestic lighting, but it appears to be well suited for factory and outdoor lighting.

City Fires. THE Coroner for the City of London in his Report to the General Purposes Committee of the Court of Common Council gives some interesting information concerning inquiries held by him into fires under the City of London Fire Inquests Act of 1888. Out of the 145 fires reported in 1907 the cause was determined in 115, leaving only 30 in which the origin was not traced. In those fires which were reported as electrical in origin, a reference appears to have been made to the City Electrical Engineer, and the cause in five out of eleven was located. The Coroner's jurisdiction under the above Act is confined to the City, and he suggests the advisability of extending the Act to other districts within his jurisdiction. The introduction of electrical lighting has introduced a cause of fire inquiry investigation, and it may be a question whether the principle of the City Fire Inquests Act might not beneficially be extended to the metropolis generally, as well as to other large cities and towns.

Goods Supplied by Owners. WE print in another column (page 12) a circular issued by the "Tyne and Blyth District Conciliation Board for the Building Trades," protesting against the practice of employers undertaking contracts to find labour only, the material being found by the building-owner, or ordered by the architect. We print the letter, as it raises a point of some importance in connexion with the carrying out of building contracts; but we cannot exactly see why any kind of grudge should be felt against employers, in other words contractors, for accepting contracts under these circumstances. It is surely not their fault; if a building-owner chooses to supply materials, how is the contractor to prevent it? He has no choice in the matter, unless he is expected to sacrifice his own business by refusing to accept a contract in the form offered to him by the building-owner. Nor, we confess, can we understand why this system is to cause "misunderstanding with the operatives," who are engaged for and paid for their labour, not for finding materials. If any contractor among our readers can throw any fresh light on the grounds of complaint in regard to this subject, we shall be glad to hear from him.

The Protection of Ancient Buildings. AT a general meeting of the Society for the Protection of Ancient Buildings on the 26th ult. (Sir William Richmond in the chair), Sir John Stirling-Maxwell read a paper on "A Reasonable Policy for Protecting Ancient Buildings," in the course of which he observed that a good deal of the work which was being done by the Society ought to be done by the State; and after alluding to what was done in other countries, he suggested the creation of a central "Monument Commission" for each of the three countries of the kingdom, together with the formation of a County Monument Commission for each county. All these Commissions were to draw up lists of ancient monuments within their jurisdiction, after which none of these buildings could be interfered with or altered without notice and the submission of plans to the Commission concerned. For the knowledge of these suggestions (which have our entire approval) we are indebted to the report in the *Times*. At a meeting of the Society some ten years ago, more or less, the representative of the *Builder*, who was present by invitation, having been asked to second a resolution, took the opportunity of deprecating the exaggerated views adopted by the Society in regard to ancient buildings still in use, especially their unreasonable attempt to hinder the re-roofing and repair of Dunblane Cathedral in order to fit it once more for the public worship for which it was originally erected. He had the full sympathy of some at least of the members present, one of whom thanked him, after the meeting, "for having said what much needed to be said." But since then no notice of the Society's meetings, and no invitation to be present, has ever been sent to this journal. Readers can draw their own conclusions.

Egyptian Antiquities at University College. THE exhibition of objects discovered by Professor Flinders Petrie and students during their last year's researches in Egypt, now on view in a ground-floor room at University College, does not offer anything equal in architectural interest to that instructive series of models of houses which we saw in the last exhibition. But there is a remarkable plan of a temple excavated in Sohag of which a drawing is shown. This was commenced in the Ptolemaic period, and finished under Hadrian. The plan shows a strange mingling of Greek and Egyptian elements in planning. In front there is a double row of columns forming a hexastyle portico, the centre intercolumniation much wider than the rest. Then there is a single row of six smaller columns with two built chambers behind them; and behind these what may be

called an inner peristylar temple with a cella divided into six apartments. This whole group is enclosed in a thick outer wall, hiding all the rest from view except the front portico. It is stated that the columns are Greek work, but the outer girdle wall Egyptian. Under No. 19 are a very interesting set of terracotta heads representing different types of people; the heads modelled in many cases with much force and character. There are also late work and evidently of the Greek period; indeed, some of the heads recall precisely the heads of the well-known Tanagra figurines. Various bits of Coptic detail of the VIIIth century A.D. have considerable architectural interest, especially a limestone cornice (No. 1) from a church at Deir Balyzeh, in the decoration of which a flower like the Tudor patera alternates with a feature derived from the Greek square fret.

Old Views of Rome. AT the room of the Archæological Institute, on Wednesday afternoon, a lecture was given by Dr. Ashby, Director of the British School at Rome, on some old drawings with views of Rome in the XVIth century, the property of Mr. C. W. Dyson Perrins. One of these illustrated curiously the extreme ignorance or carelessness which prevailed in those days as to the actual history and intent of ancient monuments, the monument shown in the drawing being described as that of the mythical Horatius Cocles, though there is an inscription on it giving a real name and a much later date. Among other drawings were one showing the Forum of Trajan with the chamber at the base of the column already partly excavated; so that it was known then, although the excavation was filled in again afterwards. Some views forming a kind of panorama of Rome, made in 1550 by a Dutch artist, were also exhibited. Dr. Ashby concluded by remarking on the immense number of ancient drawings of Rome known to be in existence, and the many more of which the existence might be surmised; and he called on all those who possessed ancient drawings of Rome to follow the excellent example of Mr. Perrins, and bring them into public notice, so that they might be collated and compared, with the view of increasing our knowledge of the subject.

Parish Church, and Forty Hall Estate, Enfield. AT a sitting of the Consistory Court of London in St. Paul's on June 15, Dr. Tristram, K.C., Chancellor of the Diocese, granted two faculties, on the petitions of Mr. H. C. B. Bowles, of Forty Hall and Myddelton House, Enfield, and of the vicar and wardens, for extensive alterations and improvements of the parish church, at an estimated cost of some 2,000*l*. Mr. Bowles, lord of the manor of Worcesters, Enfield, and owner in fee-simple of the Forty Hall estate, proposes to effect an alteration of the pew which he and his predecessors in title have occupied by prescriptive right during many centuries. The pew stands partly on the south side of the chancel and partly on the south side of the nave; it will be altered so as to afford a passage from the south aisle to the nave. The other petition related to a scheme for removing the three eastern bays of the gallery in the south aisle, and the three corresponding bays of the gallery in the north aisle; the erection of an oak screen in the south aisle in alignment with the chancel arch and the conversion of the east end of the aisle into a side chapel to contain a Holy Table; the erection of oak screens with new oak choir-stalls on the two sides of the chancel, the raising of the east window and reredos by about 3 ft., and the erection of a platform in two of the bays of the north aisle for the organ, with a rearrangement of the seating in the aisle beneath: the galleries at the west-end will remain as they now are. The church, dedicated to St. Andrew, is after the XIVth-XVth century styles, and has a low, embattled tower. Amongst the many fine monuments are the altar-tomb, with a heraldic brass and shields, of Joyce, Lady Tiptoft (1446: illustrated in the *Builder* of December 22, 1894), mother of the learned John, Earl of Worcester, who was beheaded in 1471; that of Edmond, Lord Roos, her son and heir (1508); the tomb of Sir Nicholas Raynton and his wife (1640-6), with effigies of them in their robes as Lord Mayor and Lady Mayoress, and of their children; and the memorial to Dr. Abernethy, the famous physician (1831). Forty Hall and Worcesters belonged to Sir John de Tiptoft, and then to the Earl of Worcester; the estate and lordship were subsequently owned by Sir Nicholas Raynton, elected Lord Mayor in 1632. Forty Hall was the seat, *temp.* James I. of Hugh Fortee; the mansion was built in 1629-32 for Sir Nicholas Raynton, the design, with that of the gateway to the stables, being ascribed, and it seems correctly so, to Inigo Jones. The Wolstenholmes greatly altered the house in 1700.

The *Builder* "Student's Column." SOME of our readers may notice that the section entitled the "Student's Column," which for many years has formed a feature in the back pages of this journal, is not continued in the volume of which this forms the first issue. The "Student's Column" was first instituted, many years ago, with the view of giving our Student readers trustworthy information on the rudiments or first principles of various practical subjects connected with building. Since then we have treated in it almost every subject that could be so treated; we could only continue it on the same lines by beginning over again; and during the last year the subjects treated in that column have in fact been rather beyond the comprehension of beginners. Instead therefore of continuing that class of articles as the "Student's Column," they will appear, either as separate articles or as short series, in the earlier pages of the paper. The present issue, for instance, contains the first instalment of an enquiry into the very important subject of "The Wasting of Iron," by a member of the Institution of Civil Engineers who has been giving this subject his special attention.

The Medical Association Building. WE are glad to learn that the Council of the Medical Association, supported in their decision by an admirable letter from Sir Charles Holroyd, have determined to ignore the foolish attack which has been made in the press on the supposed "impropriety" of the statues which form, in a sense, part of the architecture of their new building in the Strand. These constitute, in fact, a very able and interesting attempt to give sculptural expression to a building on somewhat the same lines as were followed in Greek art. The objections raised against them (if they did not proceed from a mere desire to get up a journalistic sensation) are those of vulgar-minded people who cannot understand the difference between realism and symbolism in architectural sculpture. It is to the credit of the leading daily paper that it treated the outcry with contempt from the first.

THE WASTING OF IRON.

BY THOMAS HOLGATE, M.INST.C.E., F.C.S.

THE large increase in the use of iron and steel alone, or in conjunction with concrete, tiles, or masonry, for land or subaqueous structures, has rendered the question of its perishable nature one of pressing importance, and the urgency is increased when the incidence of electrolysis thereto is brought into consideration. The growth of electric railways and the general distribution of electricity have intensified an old, if they have not added a new, factor that cannot be ignored. Experience drawn from our own country and corroborated in no uncertain manner from the Continent and from America shows that the injury effected by currents even of low voltage may be quite serious.

The title given to this study has been chosen as comprehending three subdivisions: (*a*) rusting, (*b*) corrosion, (*c*) decay. It may often be difficult to distinguish these completely; but an attempt to conform to the separate facts and ideas will probably be useful. Rusting may denote those cases where there is a visible incrustation produced at the expense of the metallic iron. Corrosion we may regard as the loss of metal without any visible deposit of oxide, as, for example, when a piece of iron or steel is said to be "pitted." Electrolysis often results in this appearance, and other circumstances may cause metal to be removed without an accumulation in the solid state of the products of the chemical action. Decay has been suggested by Messrs. J. T. Milton and W. J. Larke, as a term preferably to be restricted to those changes of structure which result in a loss of strength, even when there is no appearance of a decided loss of material. The utility of this designation appears greatest in alloys, and under this head may be considered cast iron.

Ordinarily these distinctions are not observed, and therefore in what follows there may be quotations from the records of experiments and from observations in engineering practice that do not conform thereto, and where the language must be regarded as colloquial. This study will be (1st) an inquiry into the practical experience of engineers and chemists as revealed by specific instances of wasting, and (2nd) an account of the more recondite investigations to discover definite principles at work under the varied manifestations.

In order to consider clearly the several elements of what is admitted to be a complex process, as they are exhibited in the various experiences and investigations, it is necessary to premise what are the chief forces and chemical affinities that are concerned. The wasting of iron is now generally accepted as electrochemical. In practice it is most convenient to measure the changes of energy by electrical means, the changes of composition by chemical analysis. The factors that affect the electrical behaviour are (*a*) the intensity and the quantity of the current

brought from an external source, (*b*) the same for the current produced by the interactions of the constituents of the iron alloy and the surrounding atmosphere, whether that be water, air, or earth. Those that most generally affect chemical action, and thereby electric current, are, 1st, water; 2nd, oxygen; 3rd, carbonic acid; 4th, stronger acids; 5th, the components of the iron alloy, chemically and physically, and most of all its still mysterious property the "passive state."

It is said that the late Professor Rowland once remarked "that a Steinway grand piano was a comparatively simple piece of mechanism compared with an 'iron atom'"; an expression at once picturesque and eminently sober. Professor Svante Arrhenius, the founder of the theory of electrolytic dissociation, speaking of water and its partial dissociation into ions, says that the hydrogen (positive) and hydroxyl (negative) ions play the most important rôle in nature. Water, which is usually regarded as neutral, is known by chemists now to act as a weak acid or as a weak base, according as the hydrogen or the hydroxyl ions are brought into play. The opinion seems to be growing that rusting is due primarily to the "active state" of iron, which is due to hydrogen ions, and that freedom from rusting is due to the "passive state" of iron, which is due to hydroxyl ions. The sequel will show how far these views are verified, but it will be helpful in reading to remember the known subtlety of the two chief agents, iron and water.

PART I.—EXAMPLES DRAWN FROM PRACTICAL EXPERIENCE.

Wasting in Earth.—One of a number of cannon balls taken from the former moat of the Bastille was analysed in 1905 by A. Porlier. It was found to be entirely compact and metallic in appearance, but to give a greenish-yellow fracture. The specific gravity was only 4·854, against 7·3 for cast iron and 7·84 for pure iron. It contained iron 72, manganese 0·75, carbon 5·9, silicon 0·25, oxygen 17·45, and water 2·9 per cent. On microscopical examination the original structure of white cast iron was found to be perfectly preserved, the cementite being brilliant and intact, whilst the pearlite had been replaced by ferric oxide. The replacement had thus been completed by diffusion to a depth of 2 in., the radius of the ball being 4 in., in a century or less. The high carbon content is due to a part of the iron having diffused outwards into the surrounding earthy crust. In 1904 M. Freund analysed some curious dark grey graphite-like masses formed in the walls of iron water pipes situate near an electric tramway in Frankfort-on-the-Maine; the formation of these masses, which were soft enough to be scratched by the fingernail and readily cut with a knife, proceeded from the exterior to the interior of the pipes, and it was found that they all lay on a straight line. The result of the analysis was as follows:—

Free iron, 10·4; ferrous phosphate, $Fe_3P_2O_8$, 37·1; ferrous silicate, $FeSiO_3$, 44·0; and carbon, 8·1 per cent. Comparison of the material with the unaltered iron of the pipes shows that the phosphoric acid and silica have their origin in the phosphorus and silicon contained in the iron, and are not all derived from the surrounding soil. The sponge-like decay thus found may be effected by the action of weak acids, and it is possible with a very feeble electric current (a few tenths of an ampere to 100 sq. centimetres of iron) in presence of moist soil to obtain exactly this decomposition.

H. Wehner, who in 1907 investigated the protection of water mains from rust, says that this form of destruction of iron, "sponge-like decay," is now more prevalent than formerly. It gives no outward token of rust; in fact, to the eye the iron may appear unchanged, and it is quite possible for the protective coating of lacquer or paint to be wholly undamaged. But when a hard and sharp substance is thrust into the metal it penetrates readily. The iron consists largely of pearlite and cementite, and if, as appears possible, the bulk of the silicon in grey cast iron be combined with the cementite, the pearlite contains the combined carbon. The iron alloyed with the silicon is capable of resisting electrolytic action, while the pearlite is destroyed. Various methods of combating the electrical and other forms of the corrosion of iron are discussed, and it is pointed out that white pig is more free from attack than grey pig, and the iron used 100 years ago, smelted with charcoal, is better able to resist rust than the modern cast iron.

Dr. Fritz Haber and F. Goldschmidt have investigated the corrosion of water and gas mains in Strasbourg and Karlsruhe, and find that the action is accelerated by the stray currents from the electric tramways. The cast iron suffers very little change in appearance to the unaided eye, but the metal is removed, leaving a soft, porous mass of ferrous phosphate and silicate mixed with particles of carbon and iron. The underground pipes were almost always found to be reacting as "active iron," extremely rarely as "passive." The usual coating of tar cracks, the fissures become full of water, so that, tarred or not, the metal is in contact with the same active electrolyte, *i.e.*, the water of the soil, charged with metallic salts. Tested in a 5 per cent. solution of zinc sulphate, the coating on an exhumed pipe was found to have a resistivity of 0·017 ohm per square metre, and in natural water twenty-five times as great, viz., 0·43 ohm. This is equal to the resistance of a layer of earth 1 sq. metre in area by 1 to 4 millimetres thick. The stray currents were of the direct type, and their magnitudes were determined by the following dimensions: (1) the resistivity of the earth, (2) the fall of potential in the earth, (3) the current density in the earth. The first-named is essentially the resistivity of the water absorbed in the earth, the solid earth being a non-conductor. By Kohlrausch and Holborn's rule the conductivity of ground water per cubic metre at 18° C. is found by multiplying the grammes per litre of dissolved inorganic matter in it by 0·133. Dividing this value by the number of grammes of water in a cubic metre of soil, the quotient is a rough measure of the conductivity of the earth. At Breslau sandy soil taken at different depths gave resistivities between 125 and 278 ohms. At Dresden, on the left side of the river Elbe, three loamy samples at a depth of 18 in. gave 55 to 63 ohms, and a sandy sample from the right side gave 244 ohms. A knowledge of the resistivity enables one to judge the degree of danger to which pipes are exposed when a current of the same voltage is flowing from pipes to rails, and brings more easily to notice the presence of saline ingredients (that increase the conducting power) than chemical analysis can do. The experiments and investigations of specific instances of corrosion lead to the conclusion that except in such cases where the soil exhibits an abnormally high conductivity, no marked electrolytic corrosion is to be feared where the potential difference between the pipes and rails is below 1 volt. Electrolysis can occur below this voltage, but with such minute currents, under ordinary conditions of soil, it would take a number of years before marked destruction of the pipe would be likely to occur.

Such currents when of 0·05 milliampere per square decimetre (·10764 sq. ft.), if flowing for seventeen hours per day, would equal $5 \times 10^{-4} + 3{,}600 \times 17$ hours = 3 coulombs from every square decimetre (or 28 per square foot) of pipe surface to earth. The electrolysis is equivalent to the dissolution of 0·9 mgm. of iron per day or 0·3 gram per annum. The latter is equal to $\frac{1}{300}$ of a millimetre in thickness, and presuming uniformity of distribution the metal would be diminished 1 mm. in thickness in 200 years.

Mr. W. Dudley, of the Vanderbilt University, recently investigated the conditions causing corrosion in pipes laid under the streets of the city of Nashville, and found that the amount of corrosion as dependent upon the subsoil was determined practically by its chlorine content. With the same earths the action was much lessened when saturated with coal gas, as shown by the following table:—

TABLE I.

Number and Origin of Sample of Earth.	Percentages by Weight.		Grammes Loss of Weight			
	Moisture in Air, Dried Sample.	Chlorine.	in Earth Alone.		in Earth Saturated with Coal Gas.	
				per cent.		per cent.
1. From street at the depth of the gas pipes	15·37	0·0420	20·56	33	9·17	13·8
2. Yellow clay, from 4-ft. depth, 50 ft. from sidewalk	15·82	0·0150	13·53	21	6·34	9·6
3. Loamy clay, from between the tramcar tracks, just under the street metal	14·41	0·0018	2·56	3·8	1·54	2·3
4. Vacant plot in the northern part of the city	13·95	0·0006	2·51	3·7	1·17	1·8
Average of the four samples	14·89	0·0148	9·79	15·4	4·56	6·9

Wasting in Water.—Otto Krõhnke found that the water of St. Johann-a-Saar attacked iron conduit pipes, forming a rust of the following composition:—

Iron (Fe)	13·95
Ferric oxide (Fe_2O_3)	72·76
Water H_2O	8·63
Carbon dioxide (CO_2)	2·9
Calcium sulphate ($CaSO_4$)	0·78
Chlorine (Cl_2)	traces
Soluble in hydrochloric acid	0·5
	99·38

The water is only of two degrees of hardness and contains 38 milligrams of carbon dioxide per litre (or 2·66 grains per gallon), with only traces of carbonates. The rusting must be accelerated by the carbon dioxide in the water, because it is decreased by the addition of calcium salts. The presence of a certain quantity of calcium hydrogen carbonate causes the formation of a layer of calcium carbonate which protects the iron from further rusting. Neither the rust nor the water after its passage through the pipes contained sulphides or iron sulphate.

Paul Petit (C. R. 123) found that when water containing 638 milligrams per litre (or 44·6 grains per gallon) of calcium carbonate dissolved in carbon dioxide is brought into contact with finely powdered iron, more than half the carbonate is precipitated, and iron is dissolved. Water saturated with carbon dioxide (CO_2) will dissolve of iron as much as 35 grains per gallon with liberation of an equivalent quantity of hydrogen. The iron is converted into ferrous carbonate, and if the solution is exposed to air, ferric oxide is precipitated. The water of the Moselle was found to dissolve of iron 0·22 grains per gallon, but if previously treated with a current of carbon dioxide for a few minutes it dissolved 14 grains per gallon. On the other hand, if mixed with lime until slightly alkaline it dissolved no iron at all. Water containing about 1 part

per 10,000 of common salt (NaCl), potassium sulphate (K_2SO_4), calcium chloride ($CaCl_2$), calcium nitrate $Ca(NO_3)_2$, but no carbon dioxide, dissolved only minute traces of iron, although a notable amount of iron was oxidised, in degree according to the order given. If these solutions are saturated with carbon dioxide the quantity of iron oxidised but not dissolved in each case is considerable, and is decidedly largest with potassium sulphate, the same with common salt as with water, less with calcium chloride, and considerably less with the nitrate. The potassium sulphate solution becomes alkaline and the residue contains sulphide of iron. With this exception the action peculiar to each salt is independent of the presence of carbon dioxide. When air has access to the solutions the quantity of iron dissolved remains practically the same, but the quantity of iron oxidised increases enormously. (These experiences show that the presence of carbon dioxide favours solution of iron, whilst that of air favours oxidation, which is in complete agreement with the investigation of Collins, Whitney, and Moody given in Part II.) Messrs. J. L. Howe and J. L. Morrison ascertained the action of hard water on iron, by using tap water containing an excess of carbon dioxide and a relatively large proportion of magnesia (MgO), along with a little sulphate and only a trace of chlorine. This was allowed to act on various metals for a period of four months, and comparative experiments were made, using distilled water. It was found that the hard water, if exposed to the air, acted readily on iron, but not on aluminium or nickel.

Robert Meldrum made experiments extending over four weeks to discover the action of water and saline solutions on metallic iron. He found that the oxidation of iron in water takes place in the absence of ammonia, carbon dioxide, or of bacteria and other forms of life, but did not decide whether the action is due to the water itself or the dissolved oxygen. Piano wire was used in glass bottles, and generally a white cloud formed immediately round the metal, which extended, and in fifteen minutes the whole liquid became cloudy and then yellow, a yellow precipitate forming in three or four hours. Sometimes the internal surface of the glass was coated with an iridescent film, from which glistening plates became detached and were found in the precipitate of hydrated oxides. This occurred when the surface of the iron exposed was great in proportion to the volume of water, and when there was free contact with the air. In bottles half full of 1 per cent. solutions of pure salts, activity was observed in the following cases, ammonia, sodium carbonate, sodium hydrogen carbonate, sodium and potassium hydrogen phosphates, sodium metaphosphate and pyrophosphate, potassium borate, whilst sodium and potassium biborates gave white precipitates. The following did not show any action:—Saturated solution of lime, sodium peroxide, sodium, potassium, barium, and strontium hydroxides.

H. Wehner, in his description of rust taken from the inside of water mains, distinguishes two kinds. First, in the form of coarse blotches or blisters of rust on the interior of pipes which, as a rule, run full of water, and is similar to that formed on the exterior of pipes which are laid in damp or salt soil. Second, a very fine, more or less brightly tinted, but usually yellowish, mud.

Messrs. Forbes and Pratt, of the Massachusetts State Board of Health, found as the result of many experiments that free carbon dioxide in the water supplies was in a large measure responsible for the action upon metallic pipes. A. Bruno has shown that a quantity of carbon dioxide shaken for some time with iron filings and water becomes completely replaced by an atmosphere of hydrogen, with formation of ferrous carbonate. $CO_2 + H_2O + Fe = FeCO_3 + H_2$. If a glass vessel is used this reaction is accompanied by the absorption of part of the CO_2 by the alkali of the glass. S. Birnie has shown that water itself acts on finely-divided iron at all temperatures between 0° and 100° C., hydrogen being evolved, and that the presence of oxide in the iron greatly accelerates the action.

Iron, even when alloyed, may be removed by atmospheric agency, as was shown by Joseph Habermann, who in 1905 analysed two samples of alloys of copper, zinc, and iron that had been used in covering a roof. The fact that scarcely any iron remained therein he attributes to wasting by the constituents of the atmosphere.

(To be continued.)

ALTERATIONS AT DRURY-LANE.

EXTENSIVE alterations, rendered necessary by the fire in the spring of this year, are about to be made to the stage of Drury-lane Theatre, under the direction of Mr. Pilditch, with the result that about 30 ft. will be added to its depth. In Wyatt's original design, two large scene rooms occupied the space at the back of the stage, from which they were divided by a transverse wall standing 30 ft. or so in advance of the back wall. A few years after the completion of the theatre an archway was cut through this wall, as, even in those days, the space was considered inadequate for the spectacular productions which have always been a feature of the house. During subsequent reconstruction this archway was many times enlarged; at length the wall will be completely removed, leaving a clear stage of about 80 ft. square. Most of the original timber roof-trusses perished in the recent fire. They were fine specimens of carpentry, and had remained in sound condition since they were first erected in 1812. It is doubtful, indeed, if at the present time timbers large enough for such a span could be readily procured. These trusses will be replaced by six steel lattice-girder principals, while the walls will be raised all round about 10 ft. above the existing plate level, giving to the grid a clear height of 70 ft. above the stage. The original grid was not high enough for the cloths to clear satisfactorily the top of the proscenium. A few years ago Mr. Pilditch raised the grid, formerly at the level of the tie-beams of the roof-principals, a few feet higher. The raising of the walls, however, will do away with any difficulties before experienced, and give ample room for proper manipulations. The cloths will be hung with 3-in. centres, the counterweights being arranged alternately on either side of the stage, to give sufficient clearance to them.

In the roof will be a large skylight, about 30 ft. square. In case of a fire behind the curtain the flames would find a way out by this opening before they could be driven forward through the proscenium. Curious as it may sound, it is a fact generally recognised by those who have had experience of such fires, that a roof which will collapse easily will give the auditorium the best chance of escaping, for the reason just mentioned, that the flames will find an upward vent; provided of course, as is the case almost universally at the present day, that the stage is efficiently cut off from the rest of the building.

The new fly gallery, running back on either side the full depth of the stage, will be supported by a lattice girder, extending from the back wall to the proscenium wall. At right angles to this girder steel joists, their outer ends resting on its lower flange, run into the side wall; on these the floor is laid, with a space of a few feet on the inside for the counterweights, which work on guides on the side wall. From these joists is hung the limelight gallery, immediately below, and extending the same length; the gangway being outside the suspending uprights, thus affording a clear 80 ft. on either side the stage for the handling of the limelight. The primary support to the two galleries is given by the lattice girder we have just mentioned; as the span is nearly 80 ft., and the depth has to be kept down to about 4 ft., great ingenuity was necessary in their design. At the grid and fly levels lines of hydrants and hoses run round three sides of the stage, while in front will be a safety curtain 40 ft. square. The stage will be constructed of teak, and there will be three electric and two hydraulic bridges.

With the completion of these alterations few theatres in Europe will be able to boast a larger stage than Drury Lane.

ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

THE annual meeting of the Association of Municipal and County Engineers was held at the Shire Hall, Nottingham, on Thursday, June 25. Mr. E. Purnell Hooley, County Surveyor of Nottinghamshire, the new President of the Association, occupied the chair, and among those present were Messrs. T. Cole, Westminster, secretary; H. A. Giles, assistant secretary; W. B. Purser, Kesteven County; R. Burslam, Congleton; W. Weaver, Putney; J. H. Norris, Godalming; A. E. Collins, Norwich; J. P. Spencer, North Shields; J. E. Hargreaves, Farnborough; T. W. A. Hayward, Battersea; W. Fowlds, Keighley; J. S. Pickering, Cheltenham; F. R. Phipps, Basingstoke; J. Clare, Sleaford; J. Parker, Hereford; T. S. Picton, Eccles; H. Richardson, Handsworth; R. J. Thomas, Bucks County; C. J. Fox-Allin, Smethwick; A. Beaumont, East Yorks County; T. Caink, Worcester; B. Ball, Nelson; M. Lea, Truro; R. Brown, Southall; P. G. Killick, Finsbury; F. C. Cook, Nuneaton; H. G. Whyatt, Great Grimsby; G. Bell, Swansea; J. Julian, Cambridge; O. E. Winter, Hampstead; J. Lobley, Hanley; A. J. Price, Lytham; J. Thropp, Lincoln County; J. T. Eayrs, Birmingham; A. D. Greatorex, West Bromwich; P. H. Palmer, Hastings; T. H. Tabbicom, Bristol; J. Paton, Plymouth; J. P. Barber, Islington; G. Eaton-Shore, Crewe; J. S. Brodie, Blackpool; W. N. Blair, St. Pancras; C. F. Wike, Sheffield; G. W. Lacey, Oswestry; E. B. Martin, Rotherham; E. G. Mawbey, Leicester.

Lord Belper, in welcoming the members of the Association, remarked that one of his earliest remembrances of the part he had taken in local government was that of moving a resolution that was then regarded as a most revolutionary proposal, namely, that a county surveyor should be appointed for Nottingham. He was opposed by gentlemen who posed as economists, but he won the day, and was entirely justified by results. The Association had met, proceeded the speaker, at a time when the work of the county and municipal surveyors was of the greatest possible importance to the authorities who employed them, for in his opinion there never was a time before when the questions that had to be dealt with presented greater difficulties. Take the question of the roads, especially the main roads. Owing to the great changes in locomotion county surveyors now had the problem before them of solving what he might term the almost insoluble question of making the roads efficient and satisfactory both to the new traffic, motors and heavy, machine-drawn vehicles, and the old, pedestrians and light vehicular traffic, and, perhaps the greatest difficulty of all, accomplishing this with economy, at all events without larger expense than it was necessary to incur. Whatever changes there would be in the future he felt would be in the direction of doing away with horses and increasing the number of machine-drawn vehicles. Some already fairly successful trials had been made, but with regard to economy, the only solution he saw was for the Government to take up that responsibility towards the main roads which they ought to take up, and make a very much larger grant than they did at present. He quoted findings seven years ago of the Commission on the rapid increase in rate to the effect that main roads must be considered as of national service, and should be paid for mainly out of the national funds; and he

hoped that the County Councils' Association would exert all the pressure it could on the Government in this direction. Mr. Burns's Housing and Town-planning Bill was another important proposal to County Councils, who were actively interested in trying to frame amendments to bring it more into conformity with the principles of local government. To a deputation from their Association the other day Mr. Burns was very conciliatory, but the Bill at present ignored the county council, although it was the chief sanitary authority, while as to medical officers of health, their appointment was accompanied with the extraordinary proposition that the duty of those officers was to be settled by the Local Government Board. The view of the County Councils' Association was that the local authority must be trusted with the local management. At present the Bill was quite objectionable, and ought not to be submitted to by any county council. As regarded the question of town-planning, as the Bill stood it was to be in the first instance carried out as suggested by the minor local authority, with no reference to the county council whatever, and considering that many of the buildings would be put on their roads, those bodies felt it absolutely essential that they should have a voice in the matter, and that the plans drawn should be submitted to them for approval, especially in the case of main roads. Amendments were being drawn up because, while not wishing to interfere with the minor authorities, they did think that where any buildings were proposed to be built in the area of the county council that council should have a voice in the matter. The County Councils' Association would do all it could to protect the interests of the counties, and would take care that, whatever the new Bills were, the councils' position should be considered; also, as far as they could, endeavouring to prevent any large amount being added to the rates, about which there was so much complaint at the present moment. He congratulated Mr. Hooley on his prospective appointment as president, and trusted that the gatherings would be completely successful.

Mr. T. Cole, secretary, then presented the annual report of the Council, which stated that during the financial year ended April 30, forty-eight new members had joined, eighteen had resigned, and nineteen had been written off or not re-elected. The numbers on the roll of the Association at the close were: Nine honorary, 834 ordinary, thirty-nine associate members, 123 associates, and 204 graduates, a total of 1,209. The financial statement showed an excess income over expenditure for the year of 28*l.* 3s. 5d. Thirty-two candidates had satisfied the examiners, and several premiums had been awarded. The scrutineers, having examined the ballot lists, reported the following members elected as the council for the year 1908–9: President, Mr. E. Purnell Hooley; vice-presidents, Messrs. W. N. Blair, J. Paton, and C. F. Wike; ordinary members of council, Messrs. C. H. Cooper, J. W. Cockrill, A. T. Davis, A. Fidler, A. Gladwell, A. D. Greatorex, W. Harpur, T. W. A. Hayward, P. H. Palmer, J. S. Pickering, R. Read, H. E. Stilgoe, R. J. Thomas, H. T. Wakelam, and A. E. White; hon. secretary, Mr. Charles Jones; hon. treasurer, Mr. Lewis Angell. The past presidents (*ex officio* members of the council) are Messrs. A. E. Collins, J. Patten Barber, and J. A. Brodie. The elective past-presidents are Messrs. T. H. Tabbicom, J. Lobley, and O. C. Robson. It was proposed to ask the members to agree to the alteration of the name to "The Institution of Municipal and County Engineers."

The report was adopted subject to one or two minor alterations, on the proposition of Mr. J. P. Barber, seconded by Mr. Whyatt (Grimsby). A considerable time was spent subsequently in discussing alterations to by-laws, etc. The proposed alteration of the title of the association to institute was agreed upon. The premiums having been presented, the elections of the hon. district secretaries and the scrutineers were made, together with Messrs. Stallard (Oxford County) and Lacey (Oswestry Town), auditors. In vacating the chair, Mr. Barber expressed his pleasure at the recovery of Mr. Hooley from his breakdown, and assured him of the loyal support of the members.

President's Address.

The President, in his inaugural address, said that at no period in their history had a united front been more vital to their best interests than at present. With a membership roll of over 1,200 there must of necessity be differences of opinion on many matters. No thinking man could possibly entertain for a moment the belief that a body such as theirs, built up by the untiring endeavours of men whose only aim had been the good of their fellow members, could best be advanced by grave divisions and personal dissensions. Any attempt to promote a rival society must go far to enable an enemy to point out that surveyors were divided, and having thus broken their united front, to weaken our present position, which was now ever growing stronger, and truly one was tempted to say, "an enemy hath done this."

Let them turn their attention to a subject all could be united upon—the need of an alteration to the present condition of our roads. It was not his purpose to go into the ancient history of roads, their past condition or construction. Alas! they all knew their weakness and defects, but it was his intention to consider roads as they now found them, with faces of mud in winter, dust in summer, unable to stand the present traffic at either season, a source of woeful expense to the ratepayers, and forming a loyal text to the grumbler and would-be expert generally on any and every occasion. Whilst all grumbled, few suggested any real remedy, and yet every nostrum that was brought out was hailed as the be-all of all time. The Legislature had gone far to encourage the use of heavy and light self-propelled vehicles on their roads. The result they had to face to-day, for whilst encouraging the traffic, which was supposed to be for the benefit of the public in general, it was only the local ratepayers who had to bear the burthen. Looking at the matter dispassionately, their present system of financing highways did not seem good or equitable.

Whilst all grumbled at the condition of their highways, little was done to permanently improve matters. Thousands of pounds were annually expended in attempts to lay dust, and yet roads continued to be made in the same way, seemingly to encourage this dust nuisance, as fifty years ago, and any improved method was either rejected because Mr. Smith, a farmer or grocer, did not see why they should alter at all, or unfortunately the authority did not care to follow another's lead or had no faith in any one else's experiments because they had had failures themselves; or still a worse reason, the surveyor was too busy to give any special attention to any one department under his control, and the whole road work was left in the "muddle-along-somehow state" into which too much of road questions seem fated to drift. In Nottinghamshire, after long and repeated failures, they had succeeded in making roads that now appeared to admirably stand heavy and light motor traffic. When adjoining roads had completely gone to pieces by the use of traction engines, the same traffic had passed over their newly faced roads, which so far had not shown any serious signs of wear. It was generally known that these roads were made of tarmac, and had cost up to the present 2s. less per yard super to convert from ordinary macadam, and, although some portions had been constructed for six winters, had only cost 30 per cent. of the former manual labour to maintain, and had entailed no expenditure in materials or the other items attendant on road management.

Of course every possible outcry had been raised about making "motor roads," but it could not be avoided. Motors had made themselves appreciated by business men, and fortunately business men came first in England. Motors were with us, and motors would remain, and those who had to use them for business purposes well knew their work.

The greatest and worst complaint to deal with was that roads could not all be converted into model roads at once. If sections of roads were dealt with at a time the progress was so slow the public would not be content to wait. To thoroughly repair long lengths of roads meant an apparently big expenditure of capital, although if the same number of tons of material were wastefully used by being spread over large areas in tinkering with roads, the Council was held up as economically carrying out its duties at an expenditure of so many pounds per mile. It was not fair to compare the cost of roads per mile alone. A far fairer and more reliable figure to base one's comparison on was the cost per yard super of road actually maintained and repaired, and if this were done the actual cost of permanent roads constructed or patched as in Nottinghamshire would be found to be an enormous saving over water-bound roads. If that was so it clearly showed the usual practice must be at fault.

The present permanent roads could not be undertaken to a much larger extent than now because of the extra cost that would be incurred by renewing large surface areas oftener than at present, and to do more it is absolutely necessary some assistance must be obtained from other than the present sources.

To find a source he had long searched, and he offered them the best solution he had yet found.

It was to abolish the idea of taxing the motor, and instead to tax the motor driver. This was but carrying out the usual practice of taxation in England.

As far as could be ascertained all sensible and respectable motorists were agreed that special damage and wear were occasioned to the roads by the present self-propelled traffic, and none would raise serious objection to taxation if it could be equitably raised and expended on the roads to bring about a much-to-be-desired improvement in their condition.

At present licences to drive were granted to anyone who applied at 5s. per annum.

Out of a total of 184,411 licence-holders, he estimated that there were 26,300 drivers of vehicles for commercial and public purposes, for which he proposed a tax of 1*l.* 5s.; 46,100 drivers using cars partly for pleasure and partly for business, for which he proposed a tax of 5*l.* 5s.; and 112,011 drivers who used cars for touring purposes, for which he recommended a tax of 10*l.* 5s.

This taxation would provide an annual income of 1,376,910*l.* to improve the condition of the roads.

On the proposition of Mr. Paton (Plymouth), seconded by Mr. Hayward (Battersea), a vote of thanks was accorded to Mr. Hooley for his address.

SAILORS' AND SOLDIERS' HOME, PORTSMOUTH.—On the 18th ult. the Duchess of Albany visited Portsmouth to lay the foundation-stone of the Wesleyan Sailors' and Soldiers' Home and Church-hall, which is being built in Edinburgh and Unicorn roads. The building will contain refreshment-rooms, kitchens, reading and games rooms, committee-rooms, about eighty sleeping-cubicles, and an assembly-hall on the first floor, with seating accommodation for 420 persons. Externally the structure will be in red pressed bricks, with Bath stone dressings. Messrs. Gordon & Gunton are the architects.

ST. JOHN'S HOSPITAL, LICHFIELD.

THE Hospital of St. John the Baptist, commonly called Bishop Smyth's almshouse, at Lichfield, was founded about the end of the XVth century by William Smyth, who was consecrated to the See of Coventry and Lichfield in 1493. The exact date of its foundation is a matter of conjecture, but, as the founder died in 1514, the building was probably completed before that date. Its most distinctive architectural feature is the long row of chimneys projecting from the wall facing the street, conveying an appearance at once interesting and suggestive. The chapel attached to the foundation underwent a severe restoration by Chancellor Law in 1840, when it was practically rebuilt. Over the doorway is a tablet surmounted by armorial bearings and a bishop's mitre, recording the gift of the founder.

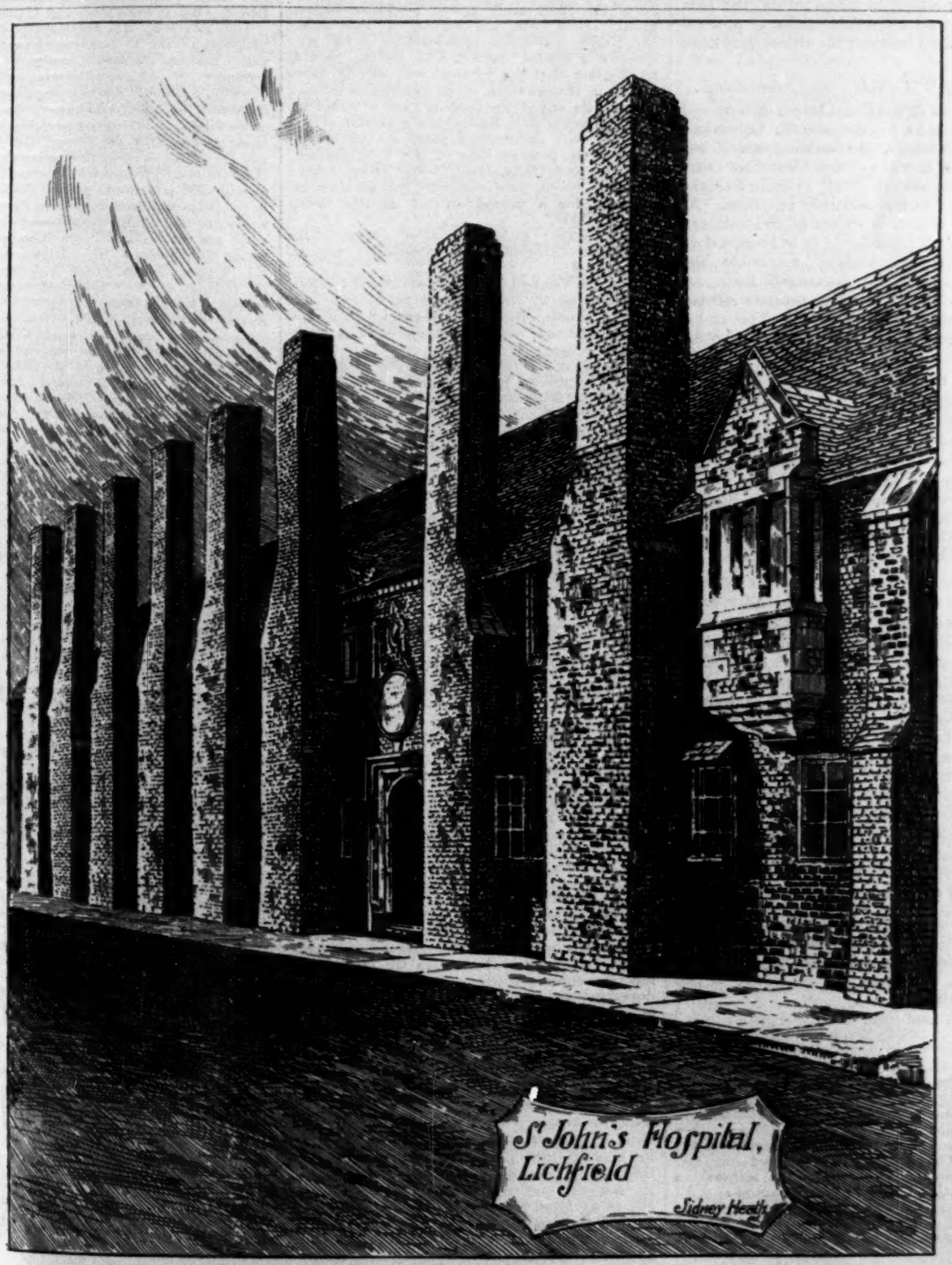
SIDNEY HEATH.

DRILL-HALL, FOCHRIW.—A hall, capable of seating about 200 people, has been presented by Messrs. Guest, Keen,& Nettlefolds, Ltd., to the Fochriw Ambulance Brigade. The hall was built by Mr. Wm. Watts, of Dowlais, from designs by Mr. Vaughan, also of Dowlais.

NOTES FROM SCOTLAND.

Decay of Stonework.

THE decay of the stonework in buildings in our large towns has become a serious problem for individuals and committees alike. No suitable material can be regarded as absolutely permanent in its resistance to the elements, and when to these natural causes is added the polluted atmosphere of our large manufacturing towns the destructive forces are considerably augmented. Of these materials stone appears to offer the least resistance; yet the public, well aware of its weakness, is still prejudiced against the employment of more lasting and quite as suitable material as brick, terra-cotta, etc. Anyone visiting any of the large towns in Scotland must be struck with the black, cast-iron like surface of most of the buildings, especially those in the closer-built parts of the town and near to public works. The only relief to the otherwise even, grey tone is to be found below the cornices, string-courses, and projections, where the disintegration is going on most rapidly and exposing fresh surfaces to view. A remedy has been sought for many years, and in the more important buildings great care has been exercised in the selection and building of the stonework, but with all the assistance from scientific as well as practical men this has only been a qualified success. Some buildings with carefully-selected stone show unmistakable signs of decay within a year, and this under favourable conditions. The decay commences first under cornices with large broad surfaces and spreading to the frieze; in a short time the carving and ornaments, if any, become blurred and indistinct. Many large buildings erected within the last twenty years have had their surfaces patched and treated at an expenditure of thousands of pounds, and there is no guarantee but they may require the same or a somewhat similar treatment within a like period. This is the problem which confronts many architects with important commissions on hand, and the seriousness of the problem may be judged when the local stone is being discarded and that from English quarries employed instead. This cannot always be done, as the question of cost forbids it, and so the architect with limited means at his disposal must use whatever is nearest to his hand. He should see the stone before



it is worked, he should enforce the rules as to natural beds, cover his large projections with lead, and the results may guide him in the future.

Perhaps the only solution lies in a purer atmosphere. Hygienic as well as æsthetic reasons come to our aid, and when the public believe that it is possible to have works without the polluted atmosphere they shall demand a higher state of purity in the air they breathe.

Proposed Kelvin Memorial.

A widely-expressed opinion exists in the West of Scotland that a memorial should be erected to signify the exalted genius and profound scientific achievements of the late Lord Kelvin. At a recent meeting in Glasgow, presided over by Lord Provost Sir William Bilsland, a large and representative committee was formed to take practical steps to realise this object. For seventy years Lord Kelvin had been connected with Glasgow University, as a student, professor, and Lord Chancellor, and the opinion was expressed that the memorial should, in some way, be connected with the place which was the scene of his labours. At the meeting the sum of 1,000*l.* was promised, and it is expected when the committee's report is made public the sum at their disposal will enable them to proceed with a memorial befitting the object they have in view.

Free Church Assembly Hall, Edinburgh.

The trustees of the Free Church of Scotland are proposing to reconstruct St. Columba's Church, Edinburgh, the building which was allocated to them by the Churches Commission, as an assembly hall, in order to make it more suitable for assembly purposes. At present the church is seated in the ordinary way for church purposes. It is proposed to construct division lobbies, rearrange the auditorium and the basement floor. A Moderator's room, retiring and committee rooms are also to be provided. The architects are Messrs. J. Burnet & Son, A.R.S.A., Glasgow.

Clyde River Bridge.

At a special meeting of the Clyde Trustees the subject of cross-river communication was again under consideration. The matter was remitted to the Harbour Committee two months ago for inquiry and to report on the various schemes submitted. Besides plans by Mr. Mason and Mr. Shields, some half a dozen schemes have been received, and it is expected a decision will be arrived at shortly.

Additions to the Courts of Justice, Edinburgh.

Since the rising of the Courts considerable progress has been made with the alterations and improvements of the Court of Session. The ventilating and heating operations and certain structural alterations are complete, but much remains to be done before the full use of the buildings is obtained. Two new Court-rooms are to be added, and certain improvements effected in the Advocates' Library, which is set apart for the use of the public. When these works are completed a much-needed improvement will be accomplished.

GOODS SUPPLIED BY OWNERS.

THE "Tyne and Blyth District Conciliation Board for the Building Trades" are circulating the following letter among architects and others who may be interested in the subject dealt with:—

"138, Portland-road, Shieldfield,
Newcastle-on-Tyne.
June 26, 1908.

Dear Sir,—A joint meeting of the employers and operatives has been held recently, at the request of the latter, to consider a complaint with regard to employers undertaking contracts to find the labour only, the material being either found by the client or owner, or ordered by the architect. The subject has cropped up frequently with the men, and with a view to avoiding further friction it was resolved:—

"That representations be made to owners and architects and others interested, that contracts based on goods being supplied by the owners and the labour only by the contractor are detrimental to the building trade."

I am desired by the above Board to draw your attention to the fact that many of the contracts submitted to the employers for consideration, owing to their containing so many prime cost sums and other items, leave to the builder little more than the provision of the labour, which has caused much misunderstanding with the operatives, who complain that the working rules are being violated by the employers.

The above Board venture to draw your attention to the terms of the resolution and ask the favour of your support of the spirit of the resolution, which is in the best interests, they believe, not only of themselves and the trade, but of your own profession.

Yours faithfully,
W. T. WEIR, Chairman.
W. PATERSON, Vice-Chairman.
W. H. HOPE, Employers' Secretary.
T. WILKINSON, Operatives' Secretary."

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. R. A. Robinson, Chairman, presiding.

The Education Architect.—The General Purposes Committee reported as follows, the recommendation being agreed to:—

"Mr. T. J. Bailey, the Architect (Education), will attain sixty-five years of age on July 11, 1908, and, under standing order, should retire from the service on that date. Mr. Bailey is desirous of remaining in the service for a further period, and, having regard to the fact that the Council will shortly have before it the question of educational administration, we are of the opinion that it would be well to retain Mr. Bailey for a period of six months. We recommend that, as the retirement at the present time of Mr. T. J. Bailey, the Architect (Education), would cause inconvenience to the public service, his services be retained for a period of six months from July 11, 1908."

West Ham: Enlargement of School.—The Education Committee recommended, and it was agreed:—

That the Council has no observations to offer with regard to the proposal to enlarge the Custom House school, West Ham, by about 214 places; and that the Corporation of West Ham be so informed.

King-street, Hammersmith.—The Improvements Committee recommended:—

That the estimate of expenditure on capital account of 15,937*l.* 10*s.*, submitted by the Finance Committee, in respect of the widening of King-street, Hammersmith, at Nos. 96, 98, 116, 120, 122, 140, 152, 152A, 162, 164, 166, and 168, be approved.

The consideration of the matter was adjourned.

Housing and Town Planning Bill.—The recommendations of the Parliamentary Committee in reference to this Bill, printed in our last issue, p. 746, were carried.

Selected List of Contractors.—It was agreed:—

That the name of J. Palmer, 36, West India Dock-road, Limehouse, be added to the list of contractors to be invited to tender for structural alterations, repairs to buildings, cleaning, and painting, not exceeding 2,000*l.* in value.

That the request of J. Stott & Co., 158, Queen Victoria-street, that their name may be removed from the selected list of contractors to be invited to tender for the supply of heating aparatus, be acceded to.

Progress of New Schools, Enlargements, etc., which have been Sanctioned.—The Education Committee reported as follows:—

"We submit the following information as to the progress of new schools, enlargements, modernising of schools, alterations to schools, domestic economy and manual-training centres which have been sanctioned. The various steps in progress for the provision of elementary school accommodation, etc., are given in detail in the return on elementary school provision, which is printed as a separate document and issued three times a year. The most recent issue of this return was presented to our Buildings Sub-Committee on May 20, 1908. Four new centres are in course of erection, and six schools are being enlarged. With regard to minor improvements to schools, these are dealt with in a yearly list, and the work is carried out during the summer holidays. The list of improvements proposed to be carried out this year was before the Council on May 26, 1908, the work involved being the removal of thirty-three galleries from twenty-six schools, and the partitioning of seventy rooms to form 105 new rooms in thirty-four schools, the cost of carrying out the alterations being estimated at 15,000*l.*

As regards the remodelling of old schools, there are on the Architect's (Education) list 127 schools which are considered to be in need of modernising. There are five schools which have been completed and opened during the financial year, 1907-8. They are Alverton-street (Deptford), St. John's, Halley-street (Limehouse), Dempsey-street (Stepney), Walnut Tree-walk (Lambeth, N.). Clifton-hill (Deptford); whilst there are two schools at present being completed, viz., Cayley-street (Limehouse) and British-street (Poplar). There are nine schools at which it is proposed that a scheme of structural improvements shall be effected during the current financial year. They are as follows:—Aldenham-street (St. Pancras, E.), Atley-road (Bow and Bromley), Bolingbroke-road (Battersea), Laxon-street (Bermondsey), Marner-street (Bow and Bromley), Pritchard's-road (Bethnal Green, N.E.), Teesdale-street (Bethnal Green, N.E.), Tottenham-road (Hackney, C.), York-road (Islington, W.).

The question of the improvement, during the financial year, 1909-10, of the undermentioned ten schools is at present under consideration:—Mantua-street (Battersea), Victory-place (Walworth), Haverstock-hill (I) (St. Pancras, W.), Middle-row (Kensington, N.), Hamond-square (Haggerston), Cook's-ground (Chelsea), Great College-street (St. Pancras, E.), Peckham-park (Peckham), Ricardo-street (Poplar), Morden-terrace (Greenwich). One enlargement has been completed during the financial year, 1907-8, viz., Hungerford-road (Islington, W.).

The following is a summary of the work in progress so far as concerns domestic economy and manual-training centres: — Domestic economy—(i.) At present there are 356 London County Council centres for instruction in domestic economy (cookery, laundry, and housewifery). The accommodation provided by these centres is 56,240 places. (ii.) Two centres are in course of construction on the site of the Hotham-road (Wandsworth) school. These will provide 280 additional places. (iii.) Ten centres have been sanctioned by the Council. These will provide 1,320 additional places. The sites are as follows:—St. Thomas', Charterhouse (2) (Finsbury, E.); Glyn-road (Hackney, S.); Upper Hornsey-road and Shelburne-road (2) (Islington, N.); Dalgleish-street (2) (Limehouse); Berner-street (2) (St. George-in-the-East); Holmes-road (St. Pancras, N.). (iv.) Proposals in respect of twenty-nine centres are under consideration, and the additional accommodation proposed to be provided being 3,860 places. The sites of these centres are as follows:—Laxon-street (Bermondsey); Daniel-street (Bethnal Green, S.W.); Finlay-street (Fulham) (2); St. Dunstan's-road (Fulham) (2); Upton House (Hackney, S.); Ambler-road (Islington, E.); Duncombe-road (Islington, N.); alternative site to Mary-place (Kensington, N.); Morpeth-street (Mile End); Choumert-road (Peckham); Millwall (Poplar) (5); Keetons-road (Rotherhithe); Johnson-street (St. George-in-the-East); "Acland" (St. Pancras, N.); Mina-road (Walworth); Tooting Graveney (Wandsworth); Mulgrave-place (Woolwich); and Ancona-road (Woolwich). (v.) The improvement of six existing centres where the structures are of a temporary or unsatisfactory character is also receiving consideration. The centres in question are as follows:—Laxon-street (Bermondsey) (2); Fairfield-road (Bow and Bromley); Coburg-road (Camberwell, N.); "Marlborough" (Chelsea); Duncombe-road (Islington, N.).

Manual training.—(i.) There are at present 211 woodwork and twelve metalwork centres, providing accommodation in all for 68,000 boys a week. (ii.) The undermentioned woodwork centres have been sanctioned by the Council, and are in course of erection:—Addison-gardens (Hammersmith), accommodation 200 a week; Kennington-road (Kennington), accommodation 400 a week; Thomas-street (Limehouse), accommodation 200 a week. (iii.) A centre for 200 boys has been sanctioned by the Council on the Berner-street site (St. George-in-the-East), but the work of erection has not yet been begun. (iv.) Proposals with regard to seventeen centres are under consideration. The sites for these centres are:—Morpeth-street (Mile End); Talbot-grove (Kensington, N.); Hoxton-house (Hoxton); Laburnum-street (Haggerston); Fountain-road (Wandsworth); Barrow Hill-road (Marylebone, E.); Millwall (Poplar); Cubitt-town (Poplar); Woolmore-street (Poplar); High-street (Limehouse); Drury-lane (4) (Holborn); Mansfield-road (St. Pancras, N.); "Acland" (St. Pancras, N.) (2); and a site in subdivision C of the Tower Hamlets (School Board) division. The additional accommodation which will thus be provided is 4,440 places a week. (v.) In addition, a proposal has been made to enlarge the "Stanley" metalwork centre (St. Pancras, E.) from 120 to 160 places a week."

Greenwich: St. John's C.E. School, Russell-place, Blackheath.—The Education Committee reported that the Managers of the St. John's C.E. School, Russell-place, Blackheath (Greenwich), have stated that a large committee has been formed with the object of collecting the money required for the building of the proposed new school, that an excellent unencumbered freehold site, touching the boundary of the present school playground, and valued at 500*l.*, has been presented to the Managers, that an amount of over 1,500*l.* has been already guaranteed towards the cost of the building, and that plans have been prepared and will be submitted for approval in a few days, after which a building contract will be entered into without delay.

Theatres, etc.—The Theatres and Music-halls Committee reported that they had considered drawings with regard to the undermentioned premises. They had no objection thereto:—

Challis's Royal Hotel, Rupert-street—Alterations on the ground floor.

Franco-British Exhibition, Shepherd's Bush—Internal arrangements of buildings Nos. 2, 2a, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 21, 23, 24, 27, 28, 47, 48, 49, 51, 52, 100, and 133; also drawings of buildings Nos. 56 (gigantic flip-flap—staging), 134 (Mont Blanc pavilion), 136 (Y.W.C.A. club), 146 (old English house), 148 (Mayhew compo-board pavilion), 149 (bungalow), and 151 (Chiswick Soap Company's pavilion).

London Exhibitions Buildings, Earl's Court—Arrangements in connexion with "cake-walk" and "oscillating stairway."

Madame Tussaud's Exhibition—Electrical arrangements in connexion with new ventilators.

Olympia, Hammersmith—Mining Exhibition, July 11 to 31, 1908; and motor exhibition in November, 1908.

Three classrooms on the south-west side of the corridor, Este-road School, Battersea, and also for the main corridor of the school (Mr. Hammond)

Provision of a ventilating fan in the roof of the auditorium at the Kingsway Theatre, Great Queen-street (Messrs. E. L. Berry, Harrison, & Co.).

Alterations proposed to be made in the dressing-room block at the Palace Theatre of Varieties, Cambridge-circus, in order to provide increased office accommodation (Mr. J. Emblin-Walker).

Application by Mr. E. F. Cobb, on behalf of the Rev. H. Nixon, for a certificate for an institute and mission-hall proposed to be erected at the junction of Townley-road and Lordship-lane, Dulwich, in connexion with the St. Barnabas Institute.

Forming a waiting-room by roofing over the yard at the rear of the Shepherd's Bush Empire (Messrs. F. Matcham & Co.).

Asylum Buildings.—It was agreed that a sum not exceeding 830*l.*, being part of the capital estimate approved on May 29, 1906, in respect of the erection and equipment of additional buildings at Colney Hatch Asylum, be applied to an object not named in the estimate, namely, to certain alterations and improvements of the laundry at Colney Ha Asylum.

By-laws under the London Building Act, 1894, and the Advertisements Regulation Act, 1907.—The Building Act Committee reported as follows:—

"On May 26, 1908, the Council decided that a conference with representatives of the several metropolitan borough councils on the subject of the preparation of by-laws dealing with lamps, signs, and other structures overhanging the public way under the London Building Act, 1894, and of by-laws under the Advertisements Regulation Act, 1907, and also on the definition of the words "wooden structures" in sect. 34 of the London Building Act, 1894, should be convened by the Council, and that such conference should take place at the County Hall on or about July 9, 1908. We now find that the time at our disposal has not been sufficient to enable us to complete the preparation of the draft by-laws necessary as a basis for discussion sufficiently early to allow a reasonable opportunity to the local authorities for considering them before the conference. In these circumstances we think that the proposed conference should be postponed till after the summer recess, and we recommend that the conference between members of the Council and representatives of the several metropolitan borough councils on matters arising out of the London Building Act, 1894 and the Advertisements Regulation Act, 1907, proposed to be held on or about July 9, 1908, be postponed till after the summer recess, 1908."

The recommendation was agreed to.

Chelsea Fire-station: Alterations.—It was agreed that tenders be invited from selected firms, together with a sealed estimate from the Works Committee to be considered concurrently, for the alterations proposed to be carried out at the Chelsea fire-station.

Greenwich Generating-station (second portion): Foundations for Engines, etc.—It was agreed that the offer of E. C. & J. Keay, Ltd., to supply, deliver, and erect the steelwork required at the rates contained in the schedule of prices included in their existing contract with the Council for the supply, delivery, and erection of the steelwork required for the second portion of the Greenwich generating-station, be accepted.

The Council, having transacted other business, adjourned.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Bermondsey.—A projecting one-story shop to a building on the south-eastern side of Upper Grange-road, Bermondsey, to abut also upon the north-eastern side of Lynton-road, and the erection of a one-story water-closet addition to the building in Lynton-road (Mr. T. Sloman).—Consent.

Fulham.—Retention of a conservatory at No. 41, Ellerby-street, Fulham, abutting upon Woodlawn-road (Mr. T. Hickman).—Consent.

Greenwich.—Three bay windows at a proposed building on the south-western side of King William-street, Greenwich (Capt. W. Warburton for the Greenwich Hospital estate).—Consent.

Hampstead.—The re-erection of the Old Black Lion beerhouse, No. 295, West End-lane, Hampstead, with a projecting one-story portion in front (Mr. E. Faux for Courage & Co., Ltd.).—Consent.

Lewisham.—A one-story shop in front of No. 146, Rushey-green, Catford (Messrs. Norfolk & Prior for Mr. F. Hardstone).—Consent.

Lewisham.—An addition at No. 198, High-road, Lee, to abut upon Lenham-road (Mr. C. C. Absolom for the Trustees of the late H. Henderson).—Consent.

Lewisham.—Porches to two houses on the western side of the Avenue, Grove-park, Lewisham (Mr. S. S. Dottridge for the London and General Estates Company, Ltd.).—Consent.

Marylebone, East.—A one-story addition at the rear of No. 34, Queen's-road, St. Marylebone, to abut upon the north-eastern side of Woronzow-road (Mr. G. T. Jell for Mr. W. Prendergast).—Consent.

Strand.—That the application of Mr. R. T. Wreathall for an extension of the periods within which the erection of a building over a portion of Adelaide-place, Adelaide-street, Strand, was required to be commenced and completed, be granted.—Consent.

Wandsworth.—A projecting one-story shop in front of No. 394, Garratt-lane, Wandsworth (Mr. R. T. Hayes for Mr. A. Moss).—Consent.

Wandsworth.—Buildings to abut upon Upper Tooting-road, Beechcroft-road, Mandrake-road, Fircroft-road, and Glenburnie-road, Wandsworth (Mr. W. C. Poole for Mr. H. Watts).—Consent.

Woolwich.—Bay windows to Nos. 42, 44, 46, and 48, Glenhouse-road, Well Hall, Eltham (Mr. J. J. Bassett for Mr. A. Cameron Corbett).—Consent

Wandsworth.—A shop front at No. 43, Replingham-road, Southfields (Mr. R. A. Mansell for Mr. A. Groves).—Refused.

Wandsworth.—Buildings on the north-western side of Mitcham-road, Wandsworth, between Glasford-street and Otterburn-street (Mr. W. J. James for Messrs. Robertson & Barrie).—Refused.

Width of Way.

Hampstead.—A building to be used as a church-room adjoining St. Stephen's Church, Hampstead, with a boundary wall at less than the prescribed distance from the centre of the footway leading from Haverstock-hill to Pond-street (Mr. E. A. Pearce for the Building Committee of St. Stephen's church-room).—Refused.

Width of Way and Lines of Frontage.

Battersea.—A building at the rear of No. 78, Bridge-road West, Battersea, at less than the prescribed distance from the centre of the roadway of Francis-street (Mr. S. Bond for Mr. W. Corner).—Refused.

Width of Way and Space at Rear.

Poplar.—Deviation from the plan approved for the erection of a building (known as the Queen Victoria Seamen's Rest) on the site of Nos. 1 to 13 (odd numbers only), Jeremiah-street, East India Dock-road, Poplar, so far as relates to the erection of a one-story addition at the rear (for the Rev. D. Roe).—Consent.

Width of Way and Construction.

Kensington, North.—An open iron shed upon a site on the southern side of Boundary-road, Kensington (the National Motor Academy and Exchange, Ltd.).—Refused.

Line of Frontage and Construction.

Hampstead.—A show-case in front of No. 154, Finchley-road, Hampstead (Messrs. Hedderwick & Denton for Mr. E. K. W. Denton).—Refused.

Space at Rear.

Dulwich.—A modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed erection of St. Barnabas's Institute, on the northern side of Townley-road, Dulwich, with an irregular open space at the rear (Mr. E. F. Cobb for the Rev. H. Nixon and the Building Committee of the Institute).—Consent.

Marylebone, West.—A modification of the provisions of Part V. of the Act, as to the extension above the diagonal line directed to be drawn by sect. 41 of that Act, so far as relates to the erection of a building known as Northwick House, on the north-western side of St. John's Wood-road, St. Marylebone, abutting also upon the north-eastern side of Maida-vale (Mr. E. C. Pilkington for Messrs. H. & A. Harris).—Consent.

Height of Building.

Bow and Bromley.—A building on the eastern side of Smeed-road, Bow, to abut also upon Stour-road, with the height of such building exceeding the distance of the front walls of such building from the opposite sides of the said streets (Mr. H. C. Smart for Waterlow & Sons, Ltd.).—Consent.

Formation of Streets.

Kensington, North.—That an order be issued to Mr. W. G. Hunt refusing to sanction the formation or laying out of streets for carriage traffic upon part of the St. Quintin estate, Kensington, eastward of the Little Wormwood Scrubbs recreation-ground, and southward of the Great Western Railway.—Refused.

Cubical Extent and Construction.

Strand.—The construction of four sheds upon the roof of a building abutting upon Broad-street, Ingestre-place, and Lexington-street, Golden-square (Mr. A. Burr for Huggins & Co., Ltd.).—Consent.

Alteration of Buildings.

Lewisham.—A modification of the provisions of sect. 74 so far as it relates to the omission of fire-resisting separation between the trade and domestic portions of Nos. 129 and 131, Stanstead-road, Forest Hill (Mr. W. H. Hope for Mr. B. W. Parsons).—Consent.

Wandsworth.—A modification of the provisions of sect. 77 of the Act, so far as relates to the formation of window openings in the party wall between No. 113, High-road, Streatham, and the covered cartway adjoining (Messrs. Cope Brothers).—Consent.

Norwood.—The uniting of Nos. 53 and 55, Brixton-hill, Norwood, by means of an opening at the ground-floor level (Mr. C. M. Quilter for Mr. J. Chapple).—Refused.

Correspondence.

SANITARY SCIENCE AND THE FRANCO-BRITISH EXHIBITION.

SIR,—Referring to the memorial submitted to the Executive Committee of the Franco-British Exhibition by the Council of the Sanitary Assurance Association, we are, indeed, glad, as professional men interested in such matters, that attention has been called to the absence of a Sanitary Science Section in an exhibition of such a wide scope as the Franco-British, where all arts, and more particularly applied sciences, have ample space allotted to them. For many years past this subject has been carefully studied in this country, with the result that English sanitary fitments and arrangements now enjoy a world-wide reputation for their excellence.

It is unnecessary for us to dwell upon the importance of such matters to the community at large, and we sincerely hope that the Committee of the Exhibition will be able to adopt the suggestion contained in the memorial referred to, and that sanitary science will soon be well and adequately represented in all its branches.

WOOD & GIMSON.

*** We may add that we think the French would be the chief gainers by the institution of a Sanitary Science Section in connexion with the Exhibition. There are some signs that French architects and building-owners are becoming alive to the importance of the scientific treatment of sanitation; but, in regard to ordinary buildings for habitation at all events, they are still far behind England in matters of sanitation.—ED.

THE BUILDER

JULY 4, 1908.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

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MEETINGS.

SATURDAY, JULY 11.

Northern Architectural Association.—Students' Sketching Club.

Edinburgh Architectural Association.—Annual excursion to Holy Island.

Fifty Years Ago.

FROM THE *Builder* OF JULY 3, 1858.

THE CONDITION OF THE THAMES.

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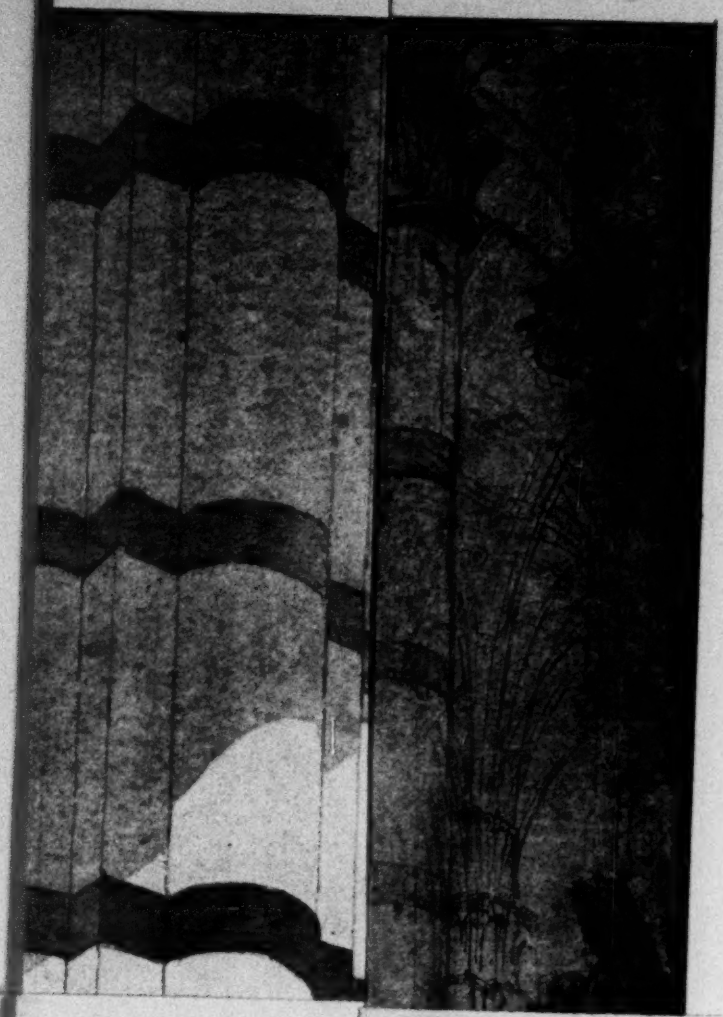

Albert Lévy, P

THE BUILDER

JULY 4, 1908.

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The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

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To Canada, post-free, 15s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

SATURDAY, JULY 11.

Northern Architectural Association.—Students' Sketching Club.

Edinburgh Architectural Association.—Annual excursion to Holy Island.

Fifty Years Ago.

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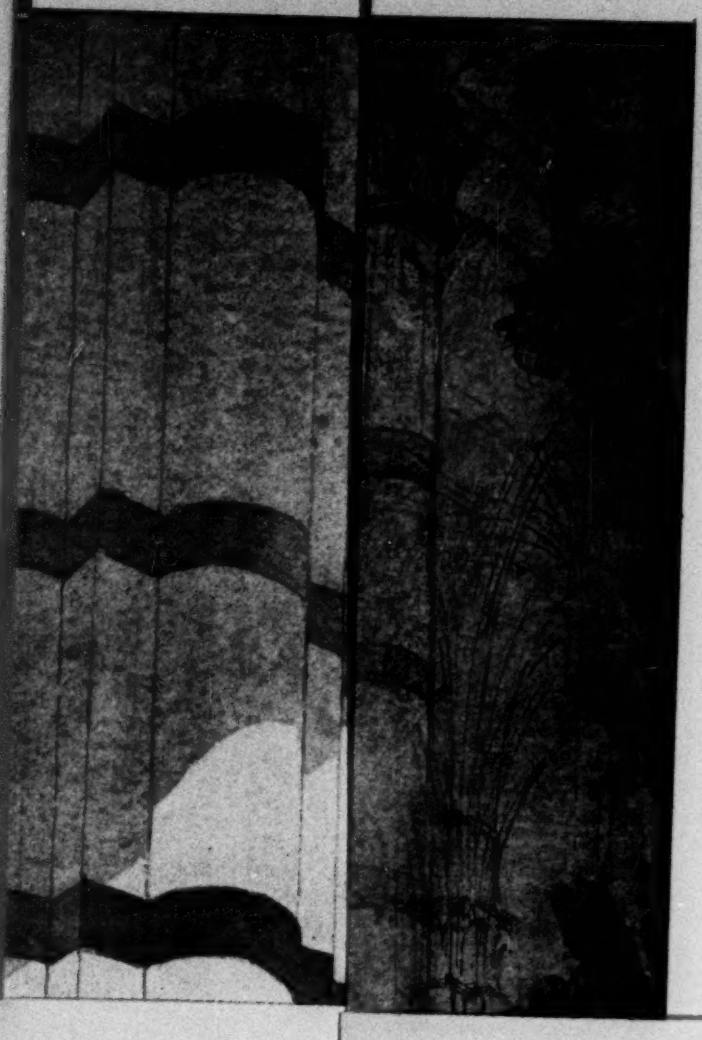

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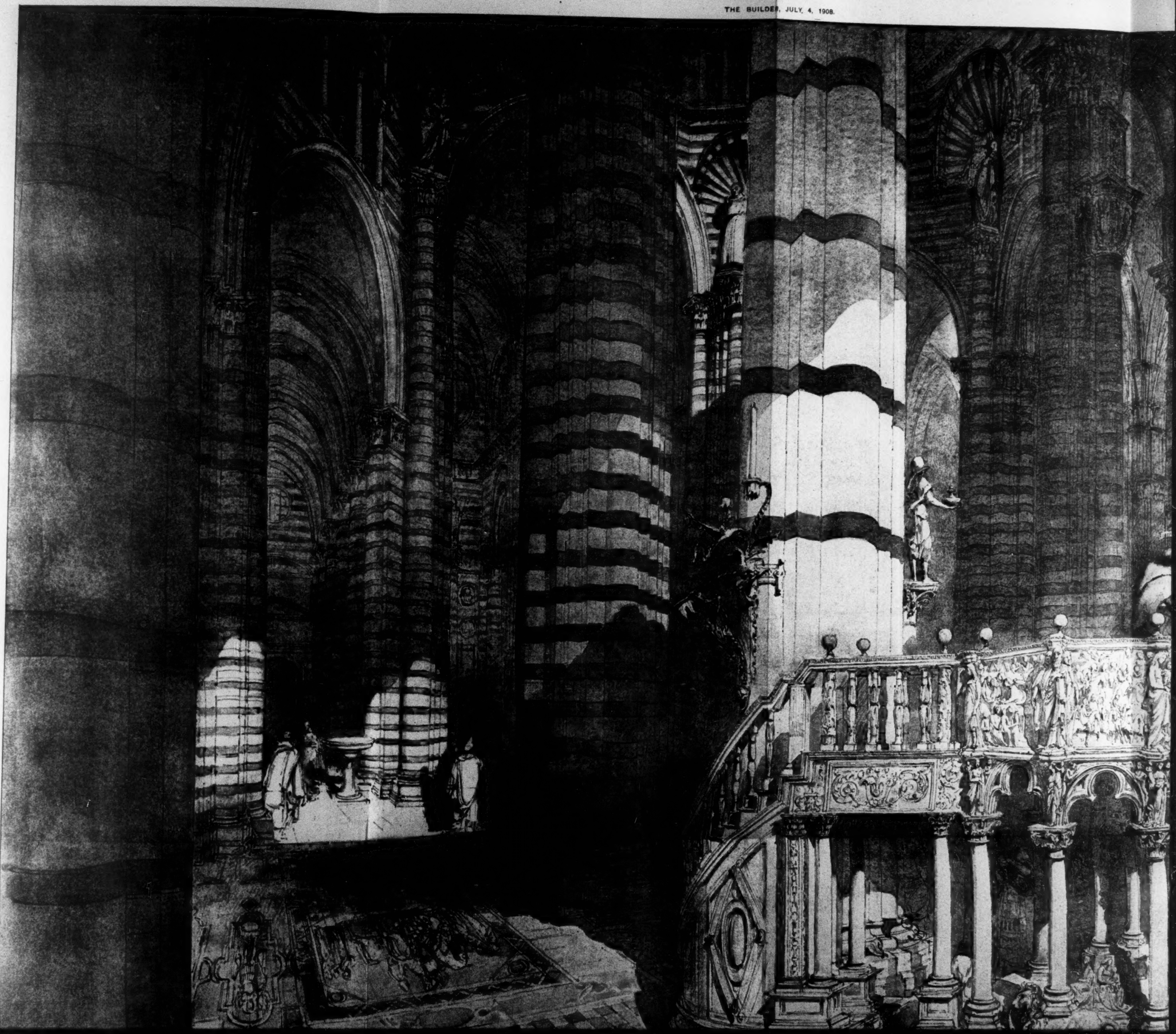

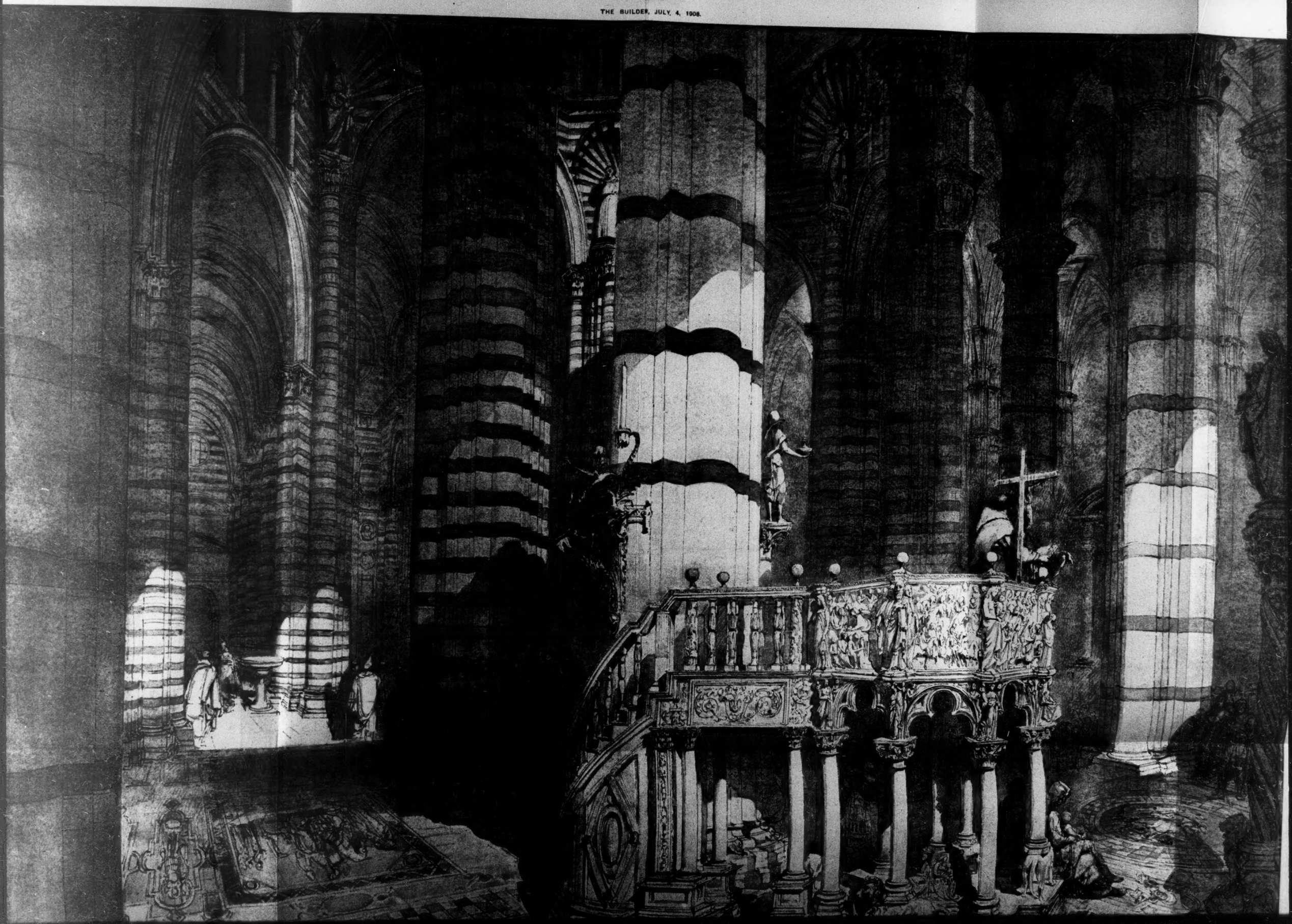

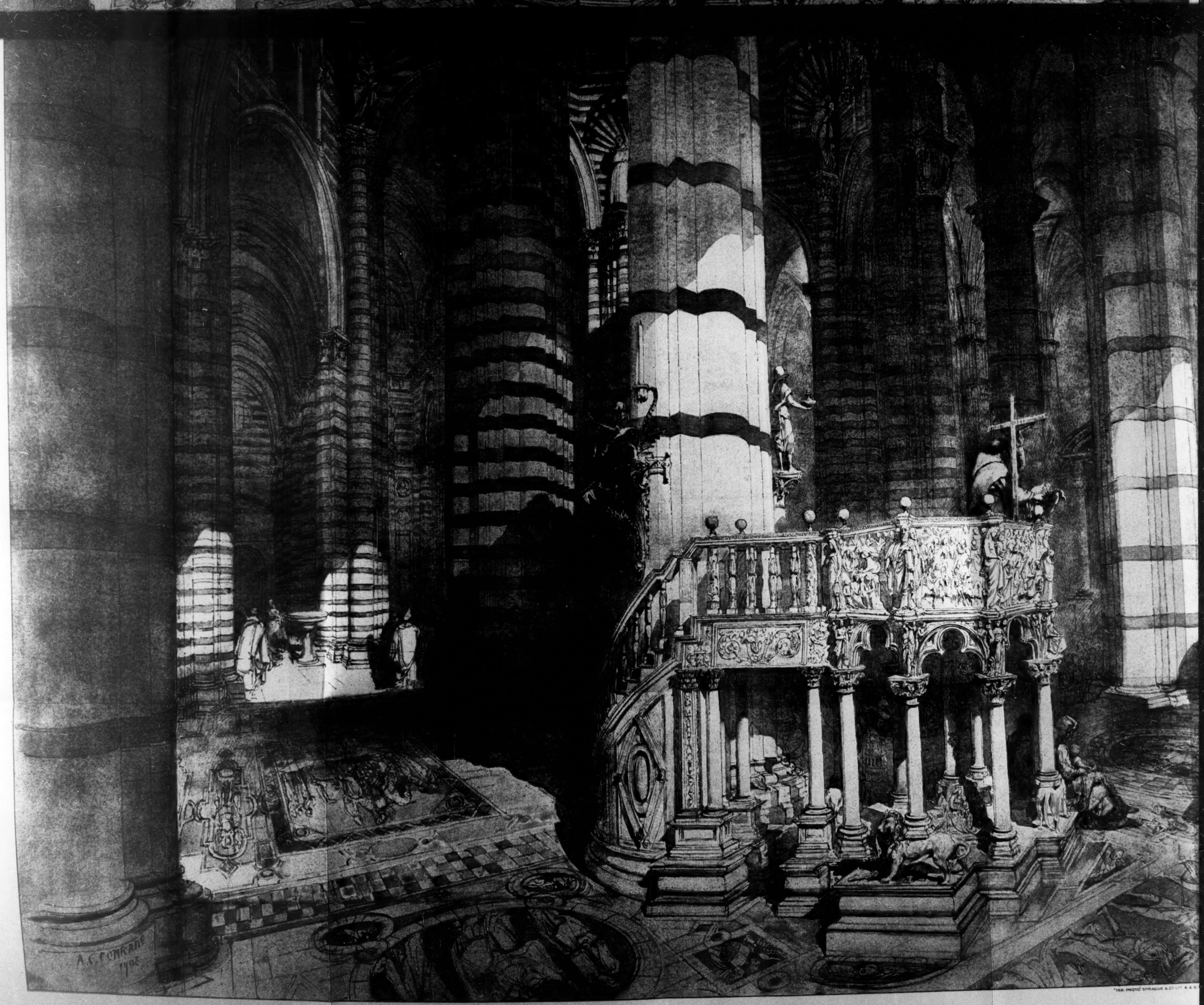
A.C. PONCANO
1908

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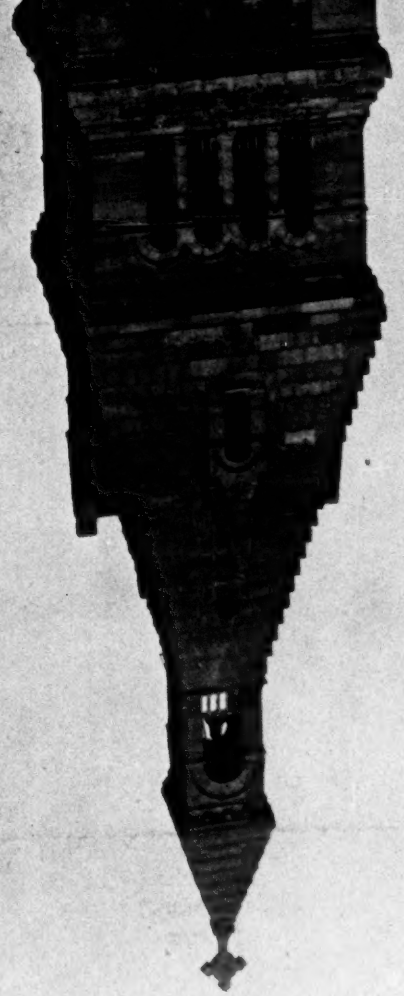

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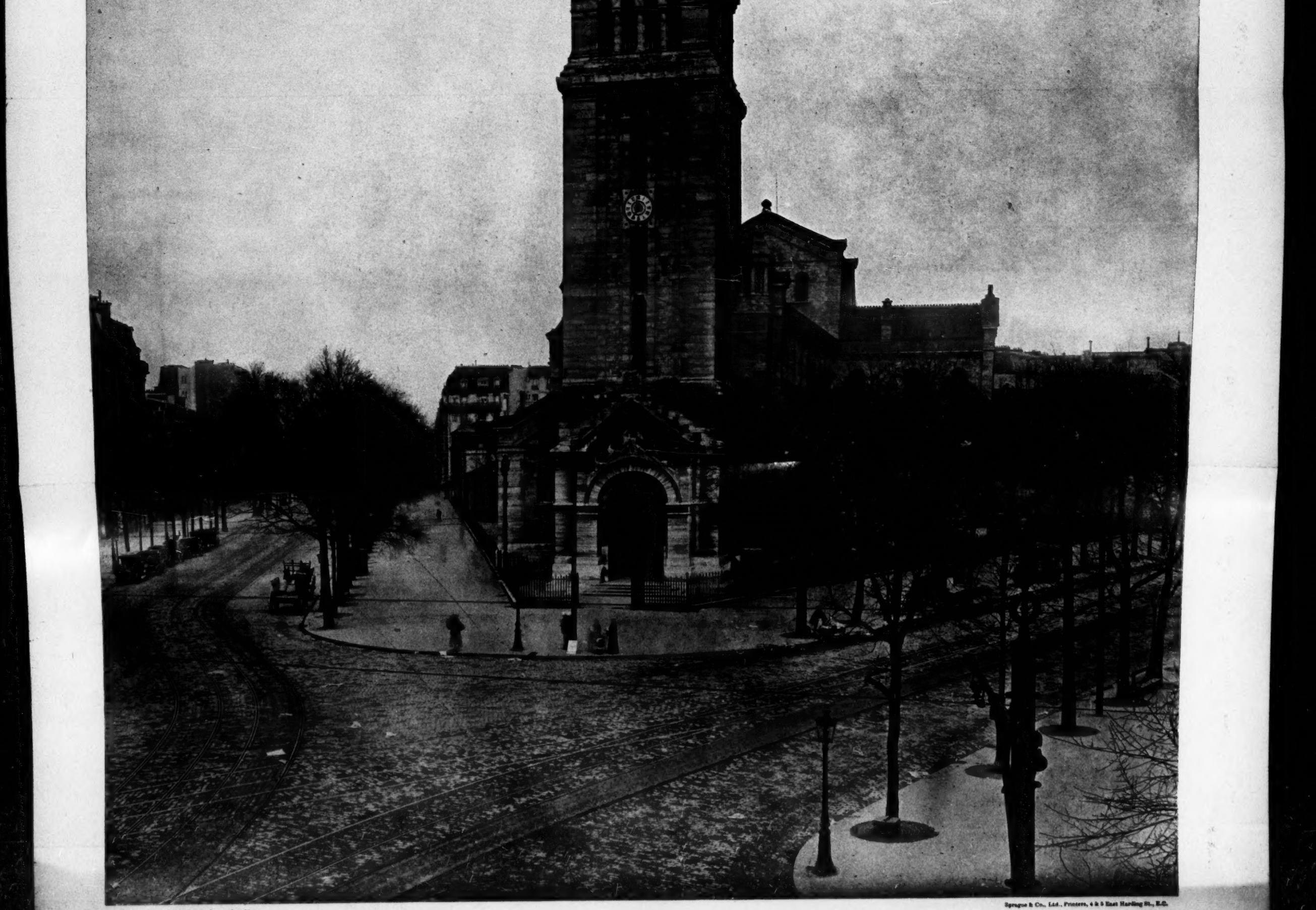

Albert Lévy, Photographer, Asnières.

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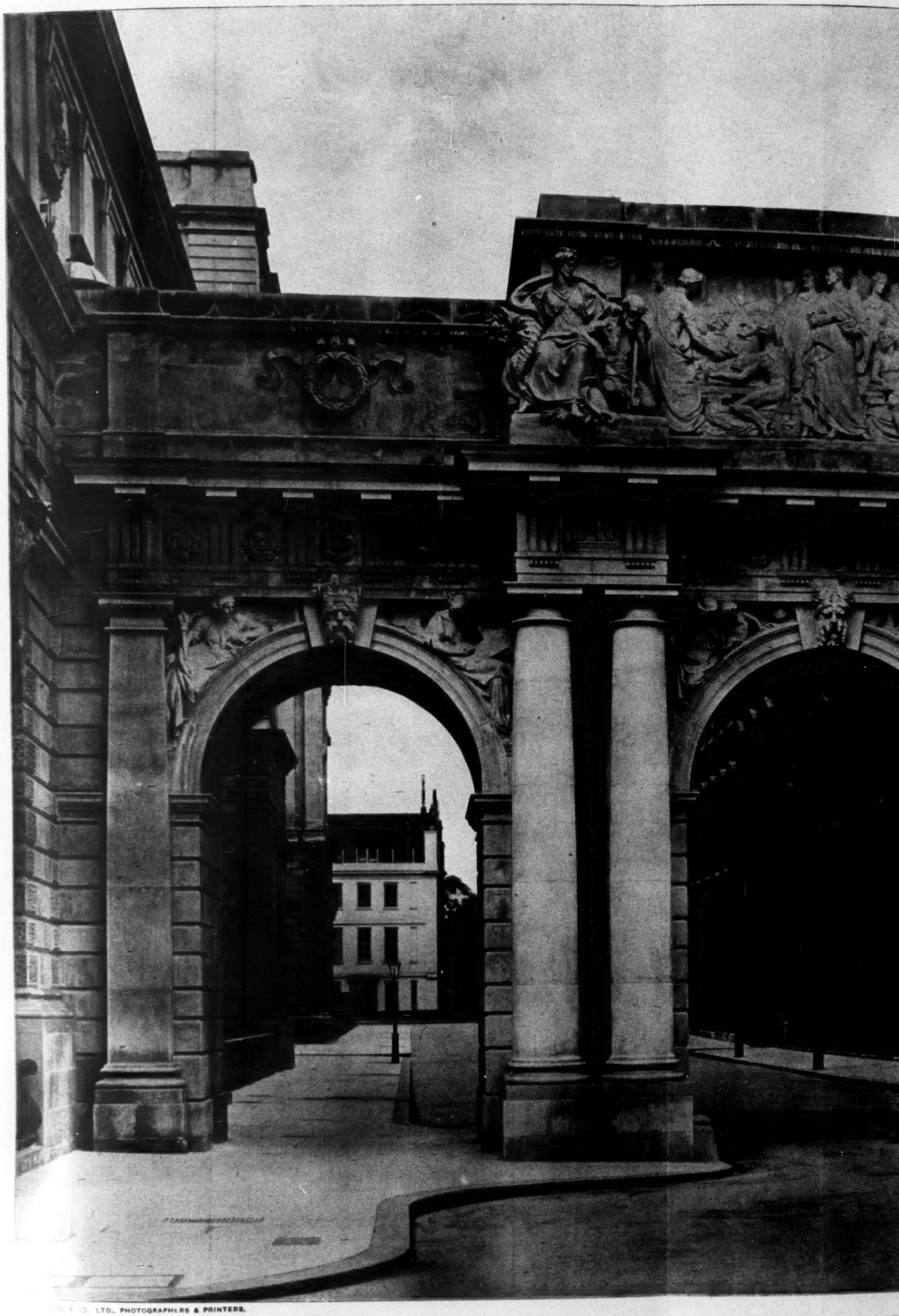

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recalls the early Christian Basilica form of plan, is 70 mètres in length.

The typanum of the entrance arch under the porch is decorated with a painting on a gold ground, by Devers.

Internally the church comprises a nave 20 mètres in height and 13 in width, with an arcade of eight bays with semicircular arches, springing from columns in granite from Vire, with carved capitals in hard Liais stone. The windows are filled with figure subjects in stained glass executed by Oudinot. The roof is an open timber one, decoratively treated; the aisles being similarly roofed.

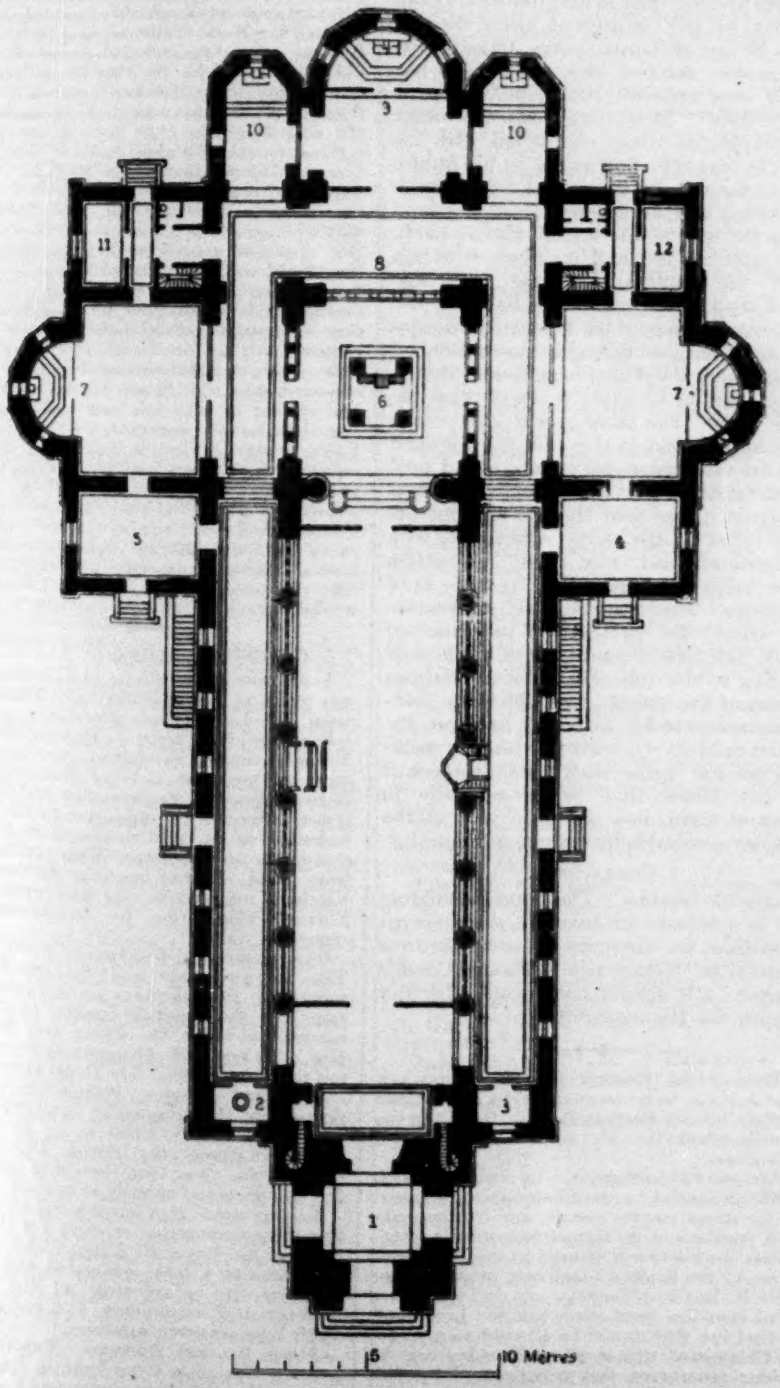
The pulpit is placed, as will be seen on the plan, in the fifth bay on the right of the nave; it is decorated with sculpture reliefs on a gold ground. The choir has an open timber roof abutting against the spandrels of the two large arches. The arch which opens on the nave springs from two columns of polished Merinville stone. In the centre of the choir is a ciborium (6) in *pierre de Tercé*, with four columns carrying round arches; it is decorated with figures of angels carved in stone by Maniglier. The same sculptor decorated the high altar with a bas-relief in marble representing the Last Supper.

Behind the choir is the Lady Chapel (9) with an apsidal termination, roofed with a semi-dome, and lighted by three windows, also by Oudinot. The semi-dome has a painting of Christ, by Capelle. Above the altar is a marble group by Le Harivel Durocher, representing "Notre Dame de Bon Secours." The altar itself has a bas-relief in marble by the same sculptor, representing the Nativity.

Below the apse is a crypt, which is attached to the "Chapelle des Catéchismes."

The church was commenced in 1863 and terminated in 1870; just in time to be converted temporarily into a hospital for the wounded in the siege of Paris!

The building cost about 1,900,000 francs. The artistic decoration cost 38,830 francs—1,500 for paintings, 17,440 for sculpture, and 19,890 for stained glass.



Plan of Saint-Pierre de Montrouge, Paris.

NEW BRIDGE, GOVERNMENT OFFICES.

We give an illustration, from a photograph taken specially, of the bridge which forms the means of communication between the new and old blocks of Government Offices facing Parliament-street.

Mr. Montford, who executed the principal sculptural decoration, was desired by the Office of Works to base his sculpture on the fact that the bridge connected the three Departments of the Home Office, the Education Board, and the Local Government Board. In accordance with this suggestion, the allegorical figure on the right is represented as protecting and encouraging the Youth who is taking up the burthen of life. She has the breastplate and helmet of Minerva or Britannia.

The female figure on the left is represented as maintaining and helping the aged worker, who is now too old and weak to use the hammer, on which he leans. She wears the civic crown, as her action is mostly civic or local and not national.

The large centre panel represents Commerce and Industries: On the left Commerce between European and Eastern races; on the right the Boy suggests Technical Education, and the woman at the back, with the basket, domestic duties. The woman behind the figure of Labour represents the textile industries.

The figures in the spandrils of the arches are by Mr. Frith, and are also symbolical of the work of the Departments above named.

The bridge formed a feature in the original design by Mr. Brydon, and has been carried out by Sir Henry Tanner, of the Office of Works, with some modifications, partly arising out of an alteration in the level and the internal connexions of the bridge corridor.

Legal Column.

ACCIDENTS AND THE WORKMEN'S COMPENSATION ACTS.

In the recent debate on accidents in factories attention was drawn to the increase in both fatal and non-fatal accidents which had taken place in the decennial period, 1899-1908. Some allowance must be made for the increase in the works now within the Factory Acts and for the improved systems of notification, but the important point in the debate was the admission by the Home Secretary that the introduction of the Workmen's Compensation Acts, both in 1898 and 1907, had been followed by increased returns of the number of accidents, and he observed that the serious question to be determined was how far carelessness was encouraged by the employers being insured and the men receiving compensation. If these causes be examined it may however be doubted whether the above Acts can have affected the vigilance of employers in any way. Before this legislation came into force employers were able to insure their workmen against all liabilities then in existence, and the increase of such liabilities would make no difference in this respect, whilst employers have been under stricter regulation and supervision by the enforcement of the Factory Acts. As regards the men, however, the Workmen's Compensation Acts marked an entirely new departure. Until the passing of the Workmen's Compensation Act of 1897 contributory negligence was a bar to obtaining any damages and an incentive was offered the men to take due care and to duly observe regulations. The passing of that Act introduced an entirely new principle of law, as compensation was awarded to workmen guilty of contributory negligence, and serious and wilful misconduct alone disqualified a man from obtaining compensation. The Act of 1906 went one step further in removing even the disqualification of serious and wilful misconduct where the consequences of the man's own wrongdoing result in his death or serious and permanent disablement. If an increase in the number of accidents has followed the passing of these Acts it is not hard to see the cause. The doctrine that a man must exercise due care and vigilance is founded on common sense as well as upon the common law, and contributory negligence has always been a disqualification from recovering damages. The departure from this well-established and sound principle has been followed by consequences which should have been clearly foreseen.

WORKMEN'S COMPENSATION.

Now that the Workmen's Compensation Act is drawn in general terms the particular provisions relating to builders and building have disappeared, but none the less builders and contractors remain directly interested in the interpretation placed on its sections since all their workmen are now within the Act. Three recent cases may therefore be very shortly noted. In Cremins *v.* Guest, Keen, & Nettlefolds, Ltd., colliers, by arrangement with their employers, were conveyed to and from their work by trains run by the Great Western Railway Company, in carriages owned by the employers, to a platform in the employers' control, although it was erected on the railway company's land. A man waiting on this platform to enter the train was knocked down and killed by it. It was held that it was an implied term of the contract of service that the men should have the option of being conveyed to and from their work, and therefore that the employment included the time of transit and the man was killed "in the course of his employment." Under the old Act the Court would have had to have considered as well whether the man was engaged "on or in or about" the undertaking. Hill *v.* Begg is an important decision on casual labour, for the new Act provides that the word "workman" does not include "a person whose employment is of a casual nature and who is employed otherwise than for the purposes of the employer's trade or business." A man engaged from time to time to clean the windows of a private residence was held not to come within the Act, although this intermittent employment had been offered to him from time to time during the past two years. Cribb *v.* Kynoch, although decided under the Act of 1897, will probably equally apply to the new Act. A girl having been injured in a factory, proceedings were taken about a year after the accident to recover damages at common law. These proceedings were unsuccessful, and the plaintiff then applied under sect. 1, subsect. 4 (the sections in question being practically identical in the new and old Acts), to have compensation assessed. The Court held that in taking proceedings at common law the plaintiff had exercised the option conferred by sect. 1, subsect. 2 (b), although the action failed, and that recourse could not be had to the alternative offered by sect. 1, subsect. 4, of claiming compensation in these proceedings since the action had not been commenced as prescribed by sect. 1, subsect. 4, "within the time limited" by the Workmen's Compensation Act, *i.e.*, six months. In the new Act some latitude is allowed in making a claim if it can be proved that the failure was occasioned by mistake, absence from the United Kingdom, or other reasonable cause. This new provision would, however, appear not to affect sect. 1, subsect. 4, where proceedings independent of the Act have been taken, but to be confined to original proceedings under the Act, therefore the above decision is in point under the new Act.

RIGHT TO SUPPORT IN MINES.

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WESTMINSTER CITY COUNCIL.

AT the fortnightly sitting of the Westminster City Council on Thursday last week, the following matters were dealt with:—

Eccleston Bridge Approach.—It was agreed to reset the existing curb on concrete, and to authorise the Improved Wood Pavement Company to commence the paving with wood of the Eccleston Bridge approach.

Buckingham Palace-road.—It was decided to accept the offer of Messrs. Geo. Trollope & Sons and Colls & Sons, Ltd., to contribute two-thirds of the cost of the alteration of the footway and carriage-way of Buckingham Palace-road in connexion with the rebuilding of Nos. 32 to 44, and that the Council should defray the cost of the dip in the roadway as well as the raising of the footway.

Drainage of the Government Building, Whitehall.—A plan was submitted for the drainage of Government premises at the corner of Whitehall and Whitehall-place. The City Engineer reports that the proposed basement level of the premises is below storm-water level, and that, therefore, the premises cannot be drained at all times by gravitation. It is proposed to raise the foul water from the basement by compressed air into a slung drain, with the exception of one lavatory waste, which, together with the surface water from the open areas, is shown to discharge by means of a low-level drain protected against flooding from the sewer by means of an anti-flooding interceptor and a penstock. The City Engineer states further that all wastes and water-closets should be discharged by means of a high-level drain. Provision should be made for raising the surface water from low level to high level during storms. The plans indicate the drains only, and do not show the whole of the sanitary arrangements. As the building is being erected for H.M. Commissioners of Woods and Forests, the Committee understood that it did not come under the City Council's jurisdiction. They had, however, informed the contractors of the above-mentioned suggestions of the City Engineer.

Construction of Public Urinals.—The London County Council, in reply to the City Council's request, that the London County Council would not require notice to the District Surveyor of their approval in connexion with the erection of public urinals, had written stating that they could not ignore the obligations which the London Building Act imposed on the County Council and the District Surveyors, and therefore they could not accede to the City Council's request.

St. George's (Hanover-square) Hall.—It was reported that the Royal Society of Medicine had offered to take this hall on a lease of not less than ninety years at a rent not exceeding 1,500*l.* a year, subject to their being allowed to enlarge the Council hall by taking down the gallery wall and throwing it into the two adjoining rooms; to build on the top of the Council hall two smaller meeting-rooms; to carry the main staircase higher and abolish the second staircase; and to provide an electric lift.—It was decided to grant the Society a six-weeks' option.

COURT OF COMMON COUNCIL.

A MEETING of the Court of Common Council was held at the Guildhall on Thursday last week, the Lord Mayor presiding.

Proposed Widening of Bishopsgate-street.—A deputation of ratepayers carrying on business on the east side of Bishopsgate-street Without, between Spital-square and Brushfield-street, attended in opposition to the proposed widening of the said thoroughfare for the introduction of tramways. This petition having been read, it was, on the motion of Mr. Kimber, referred to the Improvements and Finance Committee for consideration and report.

Improvement of Bishopsgate-street Within.—The Improvements and Finance Committee submitted for adoption an arrangement for acquiring the leasehold interest in the ground needed to widen the public way in front of Nos. 102 and 103, Bishopsgate-street Within, for the sum of 760*l.*—The Court approved.

Suggested Subway, Bishopsgate-street.—Reporting on the proposal to construct a subway across Bishopsgate-street at its junction with Liverpool-street, the Streets Committee expressed the view that there was no necessity for the proposed subway at present.

Enlargement of Conveniences.—The Streets Committee submitted schemes for the enlargement of the Royal Exchange underground convenience, at a total estimated cost of 2,800*l.*, and for the enlargement of the Eastcheap underground convenience, at a cost of 2,500*l.*—Both schemes were approved.

Sewer Beneath Barbican.—Reporting on the construction of a sewer beneath Barbican, the Streets Committee recommended that the reso-

lution accepting the tender of Messrs. Killingback & Co. be rescinded, and submitted for acceptance a tender of Mr. Geo. Trentham to carry out the work for the sum of 2,786*l*. It was explained that Messrs. Killingback & Co. had had their tender rescinded at their own request, they having been mistaken as to the terms of the contract.—The Court agreed to the Commitee's recommendation.

Dwelling-house for the Superintendent of Cleansing.—The Streets Committee reported that the cost of this building and the settlement of various claims made by adjoining owners in respect of ancient lights had been 1,754*l*. 5s. 8d.

Reconstruction of Drain at the Cemetery.—The Sanitary Committee recommended that the main drain on the south-east side of the cemetery be reconstructed by the cemetery staff, at an estimated cost of 300*l*.—The Court agreed.

Inspection of Small Houses.—A letter was received from the City Coroner relative to an inquest on a woman named Chapman, who died at No. 2, Pope's-cottages, Bartholomew-close. The jury called the attention of the sanitary authority to the necessity of paying periodical visits to all small houses and tenements in the City.—Mr. Deputy Millar Wilkinson asked whether the attention of the chairman of the Sanitary Committee had been called to a report to the effect that the rooms which the deceased occupied were in a very insanitary condition, and that no inspector had visited the premises for two years.—Mr. Link, the chairman of the Sanitary Committee, said he had read the report. In the rooms occupied by the deceased there were a few cobwebs to be seen, and a hole existed in the ceiling of one room, but there was nothing which required the putting into force of any by-laws. The statement that the sanitary inspector had not visited the place for two years was quite inaccurate, as the last visit paid by a sanitary inspector was on April 4.

Appointment of Sanitary Inspector.—A letter was received from the Local Government Board stating that they sanction the appointment of Miss Dora Barron as sanitary inspector in the City of London.

Improvement of Premises.—The City Lands Committee were authorised to accept the tender of Messrs. Dolman & Mathews, 239*l*., for repairing the Corporation premises, Nos. 84, 88, and 92, New-road, and No. 15, Mount-street, Whitechapel.

Ventilation of the City of London Court.—The Law and City Courts Committee were authorised to give directions for the cleansing and painting and improvement of the ventilation of the City of London Court at a cost not exceeding 500*l*.

PROPOSED NEW BUILDINGS IN LONDON AND SUBURBS.

THE following is supplementary to the list of applications under the London Building Act, 1894, in another portion of this issue:—

Two hundred houses in Woodwarde-road, Dulwich. Mr. W. G. King, secretary and general manager, Dulwich College Estates, Dulwich, S.E.

Twenty-one houses in Montpelier-gardens, East Ham. Mr. F. Hamlett, builder, Cotswold Works, Barking-road, E.

Development by Sir Samuel Scott of portion of his estate at Bromley (north) for building purposes. Messrs. Wallords, solicitors, 27, Bolton-street, Piccadilly, W.

Enlargement of infants' school, Feltham. Mr. H. G. Crothall, Education Architect, Middlesex County Council, Guildhall, Westminster, S.W.

Girls' and infants' school at Southall (800 places). Mr. H. G. Crothall, Education Architect, Middlesex County Council, Guildhall, Westminster.

Re-erection of Princess's Theatre, Oxford-street, W. Mr. Joseph Lyons, chairman of board of directors, Cadby Hall, Kensington.

Development of street, Fulham-road, S.W. Messrs. Elms & Jupp, architect, 25, Sackville-street, W.

Additions to St. Ignatius College, High-road, South Tottenham.

Rebuilding premises of Mr. W. V. Aldridge, wholesale oilman, Islington-green, N. (recently destroyed by fire).

Tottenham.—Forty-seven houses, Rosebery-avenue. Mr. G. W. Rowley, builder, 278, Philip-lane, Tottenham; block of flats, High-road. Mr. G. W. B. Bolton, architect, 11 and 12, Finsbury-square, E.C.; twelve houses, Keston-road. Mr. T. Rowley, builder, Tottenham; sixteen houses, Gorleston-road, Mr. W. G. Rowley; additions, etc., to St. Mary's Priory, St. Anne's-road; additions, etc., to U.M. church, Mr. W. B. Rees; workshop, Park-road, Mr. R. T. Wallace; six houses, Sheringham-avenue, Messrs. Burstow & Sons; studio, High-road, Mr. F. H. Blackbee; three houses, Sirdar-road, Mr. J. Samms; houses, Mount Pleasant-road, Mr. G. H. Carter; six houses and shops, Hermitage-road, Mr. E. J. Brown; iron church, corner of Mount Pleasant-road, and the Avenue, Mr. G. A. Wilson.

Bromley.—New business premises, High-street, Mr. T. N. Marks; two houses, Alexandra-crescent, Mr. C. Banks.

East Ham.—Vicarage, Browning-road, Mr. W. Bucknall; eight houses, St. Olaves-road, Mr. W. Jameson; rebuilding Red Lion beer-house, High-street South, Mr. J. Johnson.

Convalescent Home at Worthing in connexion with Surrey County Hospital (10,000*l*.). Mr. John Eyre, Chairman of Management Committee of County Hospital.

Additions to St. Matthias' Schools, Poplar. Messrs. Fred. & T. Thorne, builders, 266, Manchester-road, E.

Steam motor garage and additions at Sun Flour Mills, St. Leonards-street, Poplar. Messrs. John Hall & Son.

Alterations to 65 to 75, Carlton-road, Walthamstow. Mr. C. W. Hodgson, architect, 259, High-street, Walthamstow.

Seven houses, Pentire-road, and conversion of stables into flats, Randolph-road, Walthamstow. Mr. H. Brodey, architect, 259, High-street, Walthamstow.

Hendon.—Nine shops in North End-road, Mr. A. W. Cleaver, architect, 54-5, London-wall, E.C.; sixteen houses, Improved Industrial Dwellings Company, 33, Finsbury-square, E.C.; twenty houses, North End-road, and Park-drive, Mr. W. J. King, builder, 7, Heath-street, N.W.; two houses, Temple Fortune-hill, Hampstead Tenants, Ltd.; three houses, Hampstead-way, Carshalton District Development Company, 1, Hill-road, Sutton; eight houses, Golder's Green-road, N.W., Mr. R. Vernon Hart, builder, Burgess-park, N.W.; new roads, Garden Suburb, and thirteen houses, Hampstead-way, Messrs. Unwin, Parker, & Unwin, architects, Wildes Farm, North End; eight houses in Middleton-road, Mr. E. Streacher, builder, Sanderstead Station, Croydon; two houses, Woodstock-road, Mr. J. Gibb, jun., builder, Golder's Green-road, N.W.; eleven houses, Messrs. W. Moss & Son; eight houses, Messrs. Thos. Young & Sons; drill-hall at St. Joseph's Convent, Messrs. Enden, Egan, & Co.: three houses, Hamnstead-way, Messrs. Scruttin & Crebbin; four shops, Mr. F. Perren; nine shops, North End-road, Mr. H. F. Harrington.

Vagrant ward accommodation at Workhouse, Watford. Mr. J. L. Tyler, builder, 133, Vicarage-road, Watford, Herts.

Parochial hall at Mitcham (3,200*l*.). Rev. E. J. Baker, Vicar of St. Barnabas, Mitcham.

Congregational church, Wallington (Surrey). Rev. G. Mannington.

Two shops, Clayton-road, Hayes (Middlesex). Hayes Development Company, Hayes.

Four houses at Hayes (Middlesex) for Great Western Railway Company.

Rebuilding of offices and sheds at Brighton-road School, Croydon (425*l*.). Mr. F. W. Honour, Warlingham.

Church at Dartford. Rev. F. V. Baker, Vicar-designate, Christ Church, Dartford.

Additions to St. John's-road Workhouse, Upper Holloway, N. Messrs. Greenaway & Newberry, architects, 21, Queen Anne's-gate, S.W.

Building in Christian-street, Stepney, E. Messrs. M. W. King & Son, surveyors, 6, Holborn-viaduct, E.C.

Additions to shop, No. 75, Whitechapel-road, E. Mr. W. G. Brown, builder, 190, Mile End-road, E.

Twenty houses, Wavertree-road, Streatham. Messrs. Chapple & Utting, builders, 24, Wavertree-road, Streatham.

Proposed new school, Blackheath, Greenwich, S.E. Managers of St. John's C.E. School, Russell-place, Blackheath.

Alterations to fire-station at Chelsea. Mr. W. E. Riley, Superintending Architect, London County Council, Spring-gardens, S.W.

Additions to school, Southwark. Managers of Christ Church C.E. School, Bear-lane Southwark.

Development of site in Gate-street, W.C. Messrs. Barlow & Roberts, builders, 15, Red Cross-street, S.E.

Building in Armagh-road, Old Ford, E. Mr. W. A. Finch, architect, 76, Finsbury-pavement, E.C.

Additions to Clapham Public Library. Messrs. J. Garrett & Son, builders, 83, Balham-hill, S.W.

Houses, record office and pavilion, Priory-lane, Putney. Mr. J. C. Radford, architect, 223, Upper Richmond-road, Putney.

Three shops and houses, Tooting. Messrs. Style & Winch, brewers, Electric-avenue, Brixton, S.W.

Additions to Clapham College, Balham. Messrs. Holliday & Greenwood, Ltd., builders, Loughborough-park, S.W.

Twelve houses, Muirkirk-road, and twenty-two houses, Ardoch-road, Lewisham. Messrs. Norfolk & Prior, architects, Catford, S.E.

Ten houses, Chalcroft-road, Lewisham. Messrs. W. J. Scudamore & Sons, builders, 13, Manor-lane, S.E.

Two houses in Heathier-road, Lewisham. Mr. A. Durbin, builder, Grove-park, S.E.

Six houses, Calverley-road, Lewisham. Mr. T. A. Boughton, builder, 87, Calverley-road, S.E.

Factory, etc., Foulden-road, Hackney. Mr. C. Gordon Smith, architect, 56, Cannon-street, E.C.

Vicarage in Margravine-road, Fulham. Messrs. Aston Webb and E. Ingress Bell, architects, 19, Queen Anne's-gate, Westminster, S.W.

Factory, Kingsland-road, N.E. Mr. W. H. Cone, builder, 80, Alkham-road, Dalston.

Competitions.

TIVERTON MIDDLE SCHOOLS' COMPETITION.—As 217 sets of designs were sent in competition for the new secondary schools at Tiverton, the work of adjudication is necessarily a lengthy one, but it is hoped to announce the result in the course of two or three weeks. The number of designs received would probably have been doubled but for the fact that the Governors returned deposits and declined to entertain applications after the date advertised. Mr. C. Harrison Townsend, F.R.I.B.A., is the assessor.

EXTENSIONS TO ISLINGTON WORKHOUSE.—At a meeting of the Islington Board of Guardians on June 25, the Accommodation Committee reported that Mr. Lewis Solomon, of 16, Union-court, Old Broad-street, had attended, and his report had been read as assessor in the competition for the proposed extension of the receiving wards at the St. John's-road Workhouse and new vagrant wards. He reported that he had examined the plans sent in by the seven competitors, and those marked "A" were the best. The Committee found that the authors of the plans, and therefore the successful competitors, were Messrs. F. H. Greenaway & J. E. Newberry, of 21, Queen Anne's-gate, Westminster.—The subject is being further considered by the Accommodation Committee.

HIGHER SCHOOL FOR ROTHERHAM.—The Buildings Sub-Committee of Rotherham Education Committee has drawn up the following conditions and instructions to architects in connexion with the erection of South Grove Higher Standard School:—(1) That no assessor be appointed; (2) that premiums of 50*l*. and 20*l*. be offered for the designs placed first and second respectively. In the event of the Committee deciding to build the school from either of the plans gaining premiums, the premium in this case to merge in the commission of the architect; (3) that the building be built of brick, with stone facings. For frontage work the best pressed bricks to be used; (4) that the total cost of the school buildings shall not exceed 11,500*l*.

BAPTIST CHURCH, HEADINGLEY.—In the limited competition held for new Baptist church and schools at Headingley, Leeds (estimated cost 8,500*l*.), the design submitted by Messrs. Percy Robinson, F.R.I.B.A., and W. Alban Jones, joint architects, of Leeds and London, has been selected. The assessor appointed by the Committee was Mr. W. H. Thorp, F.R.I.B.A. The new buildings are to be in the Gothic style, and of brick with stone dressing; the church will provide accommodation for 500, with schools, gymnasium, and church-parlour, etc. The site is a corner one at the junction of Cardigan-road with Kirkstall-lane.

Trade Catalogues.

THE BLACKMAN EXPORT COMPANY send us two circulars, one describing the "Double Blackman" ventilating fan, and the other giving particulars of high-pressure electrically-driven blowers for forges and cupolas. The new type of Blackman ventilating fan includes a wheel consisting of metal strips bent in the form of triangles, and fixed to the boss in such a way as to form two fan wheels, both inclining inwards, and joined at the periphery. The makers claim that the effect of the two inclined fan wheels is such that the back wheel supplements the action of the front one, making the central part of the fan as effective as the outer parts, and discharging air in a direction parallel to that of the spindle. One advantage of this uniform exhaust and discharge is that the fan can be worked efficiently in a tube of its own diameter. Moreover, as the front and back wheels are identical in construction, the direction of the air current can be reversed without loss of economy by changing the

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AT the fortnightly sitting of the Westminster City Council on Thursday last week, the following matters were dealt with:—

Eccleston Bridge Approach.—It was agreed to reset the existing curb on concrete, and to authorise the Improved Wood Pavement Company to commence the paving with wood of the Eccleston Bridge approach.

Buckingham Palace-road.—It was decided to accept the offer of Messrs. Geo. Trollope & Sons and Colls & Sons, Ltd., to contribute two-thirds of the cost of the alteration of the footway and carriage-way of Buckingham Palace-road in connexion with the rebuilding of Nos. 32 to 44, and that the Council should defray the cost of the dip in the roadway as well as the raising of the footway.

Drainage of the Government Building, Whitehall.—A plan was submitted for the drainage of Government premises at the corner of Whitehall and Whitehall-place. The City Engineer reports that the proposed basement level of the premises is below storm-water level, and that, therefore, the premises cannot be drained at all times by gravitation. It is proposed to raise the foul water from the basement by compressed air into a slung drain, with the exception of one lavatory waste, which, together with the surface water from the open areas, is shown to discharge by means of a low-level drain protected against flooding from the sewer by means of an anti-flooding interceptor and a penstock. The City Engineer states further that all wastes and water-closets should be discharged by means of a high-level drain. Provision should be made for raising the surface water from low level to high level during storms. The plans indicate the drains only, and do not show the whole of the sanitary arrangements. As the building is being erected for H.M. Commissioners of Woods and Forests, the Committee understood that it did not come under the City Council's jurisdiction. They had, however, informed the contractors of the above-mentioned suggestions of the City Engineer.

Construction of Public Urinals.—The London County Council, in reply to the City Council's request, that the London County Council would not require notice to the District Surveyor of their approval in connexion with the erection of public urinals, had written stating that they could not ignore the obligations which the London Building Act imposed on the County Council and the District Surveyors, and therefore they could not accede to the City Council's request.

St. George's (Hanover-square) Hall.—It was reported that the Royal Society of Medicine had offered to take this hall on a lease of not less than ninety years at a rent not exceeding 1,500*l.* a year, subject to their being allowed to enlarge the Council hall by taking down the gallery wall and throwing it into the two adjoining rooms; to build on the top of the Council hall two smaller meeting-rooms; to carry the main staircase higher and abolish the second staircase; and to provide an electric lift.—It was decided to grant the Society a six-weeks' option.

COURT OF COMMON COUNCIL.

A MEETING of the Court of Common Council was held at the Guildhall on Thursday last week, the Lord Mayor presiding.

Proposed Widening of Bishopsgate-street.—A deputation of ratepayers carrying on business on the east side of Bishopsgate-street Without, between Spital-square and Brushfield-street, attended in opposition to the proposed widening of the said thoroughfare for the introduction of tramways. This petition having been read, it was, on the motion of Mr. Kimber, referred to the Improvements and Finance Committee for consideration and report.

Improvement of Bishopsgate-street Within.—The Improvements and Finance Committee submitted for adoption an arrangement for acquiring the leasehold interest in the ground needed to widen the public way in front of Nos. 102 and 103, Bishopsgate-street Within, for the sum of 760*l.*—The Court approved.

Suggested Subway, Bishopsgate-street.—Reporting on the proposal to construct a subway across Bishopsgate-street at its junction with Liverpool-street, the Streets Committee expressed the view that there was no necessity for the proposed subway at present.

Enlargement of Conveniences.—The Streets Committee submitted schemes for the enlargement of the Royal Exchange underground convenience, at a total estimated cost of 2,800*l.*, and for the enlargement of the Eastcheap underground convenience, at a cost of 2,500*l.*—Both schemes were approved.

Sewer Beneath Barbican.—Reporting on the construction of a sewer beneath Barbican, the Streets Committee recommended that the reso-

lution accepting the tender of Messrs. Killingback & Co. be rescinded, and submitted for acceptance a tender of Mr. Geo. Trentham to carry out the work for the sum of 2,786*l.* It was explained that Messrs. Killingback & Co. had had their tender rescinded at their own request, they having been mistaken as to the terms of the contract.—The Court agreed to the Commitee's recommendation.

Dwelling-house for the Superintendent of Cleansing.—The Streets Committee reported that the cost of this building and the settlement of various claims made by adjoining owners in respect of ancient lights had been 1,754*l.* 5s. 8d.

Reconstruction of Drain at the Cemetery.—The Sanitary Committee recommended that the main drain on the south-east side of the cemetery be reconstructed by the cemetery staff, at an estimated cost of 300*l.*—The Court agreed.

Inspection of Small Houses.—A letter was received from the City Coroner relative to an inquest on a woman named Chapman, who died at No. 2, Pope's-cottages, Bartholomew-close. The jury called the attention of the sanitary authority to the necessity of paying periodical visits to all small houses and tenements in the City.—Mr. Deputy Millar Wilkinson asked whether the attention of the chairman of the Sanitary Committee had been called to a report to the effect that the rooms which the deceased occupied were in a very insanitary condition, and that no inspector had visited the premises for two years.—Mr. Link, the chairman of the Sanitary Committee, said he had read the report. In the rooms occupied by the deceased there were a few cobwebs to be seen, and a hole existed in the ceiling of one room, but there was nothing which required the putting into force of any by-laws. The statement that the sanitary inspector had not visited the place for two years was quite inaccurate, as the last visit paid by a sanitary inspector was on April 4.

Appointment of Sanitary Inspector.—A letter was received from the Local Government Board stating that they sanction the appointment of Miss Dora Barron as sanitary inspector in the City of London.

Improvement of Premises.—The City Lands Committee were authorised to accept the tender of Messrs. Dolman & Mathews, 239*l.*, for repairing the Corporation premises, Nos. 84, 88, and 92, New-road, and No. 15, Mount-street, Whitechapel.

Ventilation of the City of London Court.—The Law and City Courts Committee were authorised to give directions for the cleansing and painting and improvement of the ventilation of the City of London Court at a cost not exceeding 500*l.*

PROPOSED NEW BUILDINGS IN LONDON AND SUBURBS.

THE following is supplementary to the list of applications under the London Building Act, 1894, in another portion of this issue:—

Two hundred houses in Woodwarde-road, Dulwich. Mr. W. G. King, secretary and general manager, Dulwich College Estates, Dulwich, S.E.

Twenty-one houses in Montpelier-gardens, East Ham. Mr. F. Hamlett, builder, Cotswold Works, Barking-road, E.

Development by Sir Samuel Scott of portion of his estate at Bromley (north) for building purposes. Messrs. Walfords, solicitors, 27, Bolton-street, Piccadilly, W.

Enlargement of infants' school, Feltham. Mr. H. G. Crothall, Education Architect, Middlesex County Council, Guildhall, Westminster, S.W.

Girls' and infants' school at Southall (800 places). Mr. H. G. Crothall, Education Architect, Middlesex County Council, Guildhall, Westminster.

Re-erection of Princess's Theatre, Oxford-street, W. Mr. Joseph Lyons, chairman of board of directors, Cadby Hall, Kensington.

Development of street, Fulham-road, S.W. Messrs. Elms & Jupp, architect, 25, Sackville-street, W.

Additions to St. Ignatius College, High-road, South Tottenham.

Rebuilding premises of Mr. W. V. Aldridge, wholesale oilman, Islington-green, N. (recently destroyed by fire).

Tottenham.—Forty-seven houses, Roseberry-avenue, Mr. G. W. Rowley, builder, 278, Philip-lane, Tottenham; block of flats, High-road, Mr. G. W. B. Bolton, architect, 11 and 12, Finsbury-square, E.C.; twelve houses, Keston-road, Mr. T. Rowley, builder, Tottenham; sixteen houses, Gorleston-road, Mr. W. G. Rowley; additions, etc., to St. Mary's Priory, St. Anne's-road; additions, etc., to U.M. church, Mr. W. B. Rees; workshop, Park-road, Mr. R. T. Wallace; six houses, Sherringham-avenue, Messrs. Burstow & Sons; studio, High-road, Mr. F. H. Blackbee; three houses, Sirdar-road, Mr. J. Samms; houses, Mount Pleasant-road, Mr. G. H. Carter; six houses and shops, Hermitage-road, Mr. E. J. Brown; iron church, corner of Mount Pleasant-road, and the Avenue, Mr. G. A. Wilson.

Bromley.—New business premises, High-street, Mr. T. N. Marks; two houses, Alexandra-crescent, Mr. C. Banks.

East Ham.—Vicarage, Browning-road, Mr. W. Bucknall; eight houses, St. Olaves-road, Mr. W. Jameson; rebuilding Red Lion beer-house, High-street South, Mr. J. Johnson.

Convalescent Home at Worthing in connexion with Surrey County Hospital (10,000*l.*). Mr. John Eyre, Chairman of Management Committee of County Hospital.

Additions to St. Matthias' Schools, Poplar. Messrs. Fred. & T. Thorne, builders, 266, Manchester-road, E.

Steam motor garage and additions at Sun Flour Mills, St. Leonards-street, Poplar. Messrs. John Hall & Son.

Alterations to 65 to 75, Carlton-road, Walthamstow. Mr. C. W. Hodgson, architect, 259, High-street, Walthamstow.

Seven houses, Pentire-road, and conversion of stables into flats, Randolph-road, Walthamstow. Mr. H. Brodey, architect, 259, High-street, Walthamstow.

Hendon.—Nine shops in North End-road, Mr. A. W. Cleaver, architect, 54-5, London-wall, E.C.; sixteen houses, Improved Industrial Dwellings Company, 33, Finsbury-square, E.C.; twenty houses, North End-road, and Park-drive, Mr. W. J. King, builder, 7, Heath-street, N.W.; two houses, Temple Fortune-hill, Hampstead Tenants, Ltd.; three houses, Hampstead-way, Carshalton District Development Company, 1, Hill-road, Sutton; eight houses, Golder's Green-road, N.W., Mr. R. Vernon Hart, builder, Burgess-park, N.W.; new roads, Garden Suburb, and thirteen houses, Hampstead-way, Messrs. Unwin, Parker, & Unwin, architects, Wildes Farm, North End; eight houses in Middleton-road, Mr. E. Streacher, builder, Sanderstead Station, Croydon; two houses, Woodstock-road, Mr. J. Gibb, jun., builder, Golder's Green-road, N.W.; eleven houses, Messrs. W. Moss & Son; eight houses, Messrs. Thos. Young & Sons; drill-hall at St. Joseph's Convent, Messrs. Enden, Egan, & Co.; three houses, Hamnstead-way, Messrs. Scruttin & Crebbin; four shops, Mr. F. Perren; nine shops, North End-road, Mr. H. F. Harrington.

Vagrant ward accommodation at Workhouse, Watford. Mr. J. L. Tyler, builder, 133, Vicarage-road, Watford, Herts.

Parochial hall at Mitcham (3,200*l.*). Rev. E. J. Baker, Vicar of St. Barnabas, Mitcham.

Congregational church, Wallington (Surrey). Rev. G. Mannington.

Two shops, Clayton-road, Hayes (Middlesex). Hayes Development Company, Hayes.

Four houses at Hayes (Middlesex) for Great Western Railway Company.

Rebuilding of offices and sheds at Brighton-road School, Croydon (425*l.*). Mr. F. W. Honour, Warlingham.

Church at Dartford. Rev. F. V. Baker, Vicar-designate, Christ Church, Dartford.

Additions to St. John's-road Workhouse, Upper Holloway, N. Messrs. Greenaway & Newberry, architects, 21, Queen Anne's-gate, S.W.

Building in Christian-street, Stepney, E. Messrs. M. W. King & Son, surveyors, 6, Holborn-viaduct, E.C.

Additions to shop, No. 75, Whitechapel-road, E. Mr. W. G. Brown, builder, 190, Mile End-road, E.

Twenty houses, Wavertree-road, Streatham. Messrs. Chapple & Utting, builders, 24, Wavertree-road, Streatham.

Proposed new school, Blackheath, Greenwich, S.E. Managers of St. John's C.E. School, Russell-place, Blackheath.

Alterations to fire-station at Chelsea. Mr. W. E. Riley, Superintending Architect, London County Council, Spring-gardens, S.W.

Additions to school, Southwark. Managers of Christ Church C.E. School, Bear-lane Southwark.

Development of site in Gate-street, W.C. Messrs. Barlow & Roberts, builders, 15, Red Cross-street, S.E.

Building in Armagh-road, Old Ford, E. Mr. W. A. Finch, architect, 76, Finsbury-pavement, E.C.

Additions to Clapham Public Library. Messrs. J. Garrett & Son, builders, 83, Balham-hill, S.W.

Houses, record office and pavilion, Priory-lane, Putney. Mr. J. C. Radford, architect, 223, Upper Richmond-road, Putney.

Three shops and houses, Tooting. Messrs. Style & Winch, brewers, Electric-avenue, Brixton, S.W.

Additions to Clapham College, Balham. Messrs. Holliday & Greenwood, Ltd., builders, Loughborough-park, S.W.

Twelve houses, Muirkirk-road, and twenty-two houses, Ardoch-road, Lewisham. Messrs. Norfolk & Prior, architects, Catford, S.E.

Ten houses, Chalcroft-road, Lewisham. Messrs. W. J. Scudamore & Sons, builders, 13, Manor-lane, S.E.

Two houses in Heathier-road, Lewisham. Mr. A. Durbin, builder, Grove-park, S.E.

Six houses, Calverley-road, Lewisham. Mr. T. A. Boughton, builder, 87, Calverley-road, S.E.

Factory, etc., Foulden-road, Hackney. Mr. C. Gordon Smith, architect, 56, Cannon-street, E.C.

Vicarage in Margravine-road, Fulham. Messrs. Aston Webb and E. Ingress Bell, architects, 19, Queen Anne's-gate, Westminster, S.W.

Factory, Kingsland-road, N.E. Mr. W. H. Cone, builder, 80, Alkham-road, Dalston.

Competitions.

TIVERTON MIDDLE SCHOOLS' COMPETITION.—As 217 sets of designs were sent in competition for the new secondary schools at Tiverton, the work of adjudication is necessarily a lengthy one, but it is hoped to announce the result in the course of two or three weeks. The number of designs received would probably have been doubled but for the fact that the Governors returned deposits and declined to entertain applications after the date advertised. Mr. C. Harrison Townsend, F.R.I.B.A., is the assessor.

EXTENSIONS TO ISLINGTON WORKHOUSE.—At a meeting of the Islington Board of Guardians on June 25, the Accommodation Committee reported that Mr. Lewis Solomon, of 16, Union-court, Old Broad-street, had attended, and his report had been read as assessor in the competition for the proposed extension of the receiving wards at the St. John's-road Workhouse and new vagrant wards. He reported that he had examined the plans sent in by the seven competitors, and those marked "A" were the best. The Committee found that the authors of the plans, and therefore the successful competitors, were Messrs. F. H. Greenaway & J. E. Newberry, of 21, Queen Anne's-gate, Westminster.—The subject is being further considered by the Accommodation Committee.

HIGHER SCHOOL FOR ROTHERHAM.—The Buildings Sub-Committee of Rotherham Education Committee has drawn up the following conditions and instructions to architects in connexion with the erection of South Grove Higher Standard School:—(1) That no assessor be appointed; (2) that premiums of 50*l.* and 20*l.* be offered for the designs placed first and second respectively. In the event of the Committee deciding to build the school from either of the plans gaining premiums, the premium in this case to merge in the commission of the architect; (3) that the building be built of brick, with stone facings. For frontage work the best pressed bricks to be used; (4) that the total cost of the school buildings shall not exceed 11,500*l.*

BAPTIST CHURCH, HEADINGLEY.—In the limited competition held for new Baptist church and schools at Headingley, Leeds (estimated cost 8,500*l.*), the design submitted by Messrs. Percy Robinson, F.R.I.B.A., and W. Alban Jones, joint architects, of Leeds and London, has been selected. The assessor appointed by the Committee was Mr. W. H. Thorp, F.R.I.B.A. The new buildings are to be in the Gothic style, and of brick with stone dressing; the church will provide accommodation for 500, with schools, gymnasium, and church-parlour, etc. The site is a corner one at the junction of Cardigan-road with Kirkstall-lane.

Trade Catalogues.

THE BLACKMAN EXPORT COMPANY send us two circulars, one describing the "Double Blackman" ventilating fan, and the other giving particulars of high-pressure electrically-driven blowers for forges and cupolas. The new type of Blackman ventilating fan includes a wheel consisting of metal strips bent in the form of triangles, and fixed to the boss in such a way as to form two fan wheels, both inclining inwards, and joined at the periphery. The makers claim that the effect of the two inclined fan wheels is such that the back wheel supplements the action of the front one, making the central part of the fan as effective as the outer parts, and discharging air in a direction parallel to that of the spindle. One advantage of this uniform exhaust and discharge is that the fan can be worked efficiently in a tube of its own diameter. Moreover, as the front and back wheels are identical in construction, the direction of the air current can be reversed without loss of economy by changing the

direction of rotation of the fan. The free airway provided by the double Blackman fan appears to offer considerable advantage in dealing with air laden with dust and other particles which tend to clog fan wheels made with blades of the types customarily employed.

We have received four interesting catalogues from the General Electric Company, of Queen Victoria-street, E.C. The first catalogue describes complete electric-lighting engine-dynamo sets for country mansions, isolated hospitals, etc. Full advantage is taken of the revolution effected in electric lighting by metallic filament lamps. As these lamps only take about a third of the power required by carbon lamps, the prices of the complete sets for a given number of lamps have been notably reduced. For instance, the set required for forty 10-candle-power lamps is listed at 90*l.* only. As a horizontal paraffin (not petrol) engine is employed, and an ample battery of accumulators is included, this seems to us satisfactory. For a small charge they undertake to make periodical inspections to see that the plant is kept in a high state of efficiency, and they are also prepared to give estimates for the upkeep of the accumulators over a period of years. Larger sets up to 500 lamps are also listed. The electric fan catalogue is seasonable, and the fans seem to be well designed. The illustrated catalogue of "enamelled steel conduits" is well arranged, and contains several novelties. In the "General" electrical progress sheet we notice that a new "Fynn" single-phase commutator motor is described. It is claimed that it will start with full load without taking more than full-load current during the process. No fast and loose pulleys or belt-shifting devices are therefore necessary. This is important in connexion with the cheap supply of electric power which will probably be available in London in the immediate future.

Obituary.

MR. W. T. CARR.—The sudden death, on June 25, at his residence in Upper Norwood, is announced of Mr. William Taylor Carr, aged 71 years. Mr Carr was late Engineer to the Crystal Palace, and had been in the company's service during more than fifty years past.

MR. W. H. WELLS.—The death is announced of Mr. William Henry Wells, Chief Sanitary Inspector for Newcastle Corporation. Mr. Wells was 63 years of age, and had held his post as Chief Sanitary Inspector at Newcastle since 1890. He was also Inspector under the Food and Drugs Act, and Chief Inspector of Common Lodging-houses. Mr. Wells had been several times elected to represent northern sanitary inspectors at conferences in different parts of the kingdom, and acted as chairman of the Centre Council of the Sanitary Inspectors' Association for many years.

MR. ALFRED MEAKIN.—Mr. Meakin, managing director of Messrs. Alfred Meakin, Ltd., of Tunstall, earthenware manufacturers, died on June 23, aged 32 years. On succeeding his father in the direction of the Royal Albert and Victoria Works, Mr. Meakin established a tile-making branch, and in collaboration with Mr. Jackson, his chemist, developed his system for the employment of gas-firing in the manufacture of pottery, and achieved great success in adapting his method to the firing of enamel kilns and of ovens.

General Building News.

PROPOSED NEW CHURCH, MANSFIELD.—The contract for the erection of the new St. Lawrence's Church, Mansfield, has been secured by Messrs. T. & R. Moore, of Mansfield, for 3,025*l.* At present only the nave, chancel, and transepts will be built, and these will accommodate 326 persons. It is hoped in the near future that the north and south aisles will be added, and the church will then accommodate upwards of 500. The church will be built of Hollington stone, and will be situated at the angle between Skerry Hill and Peck's Hill. Mr. L. H. Westwick is the architect of the new church.

HEPTONSTALL PARISH CHURCH.—A movement is on foot to restore the old parish church of Heptonstall, parts of which are in danger of collapsing. At the vestry's request, Mr. Billson, architect, of Hull, has prepared a report, which contains various recommendations. The estimated total cost of the scheme of restoration is 1,100*l.*

ILKESTON PARISH CHURCH.—Provisional plans have been prepared by Messrs. Naylor & Sale, architects, of Derby, for the enlargement of this church. The plans provide for carrying the chancel much further to the east, and also the vestry and organ-chamber, thus creating a new south aisle corresponding with the chantry on the north side. The estimated cost of the proposed additions, exclusive of architect's fees, is 4,500*l.*

CHURCH BUILDINGS IN FULHAM.—The Fulham Borough Council has aproved of the plans, prepared by Sir Aston Webb and Mr. E. Ingress Bell, for a new vicarage in connexion with St. Alban's, Fulham, and has also consented to the application of Mr. A. C. Forrester to the erection of an oak lych-gate at St. Andrew's Church, Greyhound-road.

CONGREGATIONAL CHURCH, JARVIS BROOK, SUSSEX.—A new Congregational church has just been opened at Jarvis Brook. The new building, which has been designed by Mr. Clayton, of Brighton, and executed by Mr. Woods, has seating accommodation for about 150.

BAPTIST CHAPEL, CHELMSFORD.—The foundation stones were recently laid of a new Baptist chapel at Chelmsford. The chapel will be a red-brick building, with stone dressings. There will be galleries in the side of the chapel, and seating accommodation for 650. At the rear will be vestries and class-rooms. The buildings, which will cost about 6,000*l.*, will be lighted by electricity, and heated by hot water on the low-pressure system. The architect is Mr. W. Hayne, of Frinton-on-Sea, and the builder is Mr. A. E. Farr, of the same place.

BAPTIST SCHOOLS AND INSTITUTE, HIGH-STREET, ILFORD.—The above new building was opened on Tuesday, 16th ult., the site being at the rear of the church, which was completed some months ago. The facings are of red pressed bricks and the dressings of Bath stone. The architects, whose design for the church, schools, and institute was selected in competition, are Messrs. Geo. Baines & Sons, of London; the builders are Messrs. F. & A. Willmott, of Ilford. The contract amount for the institute buildings was 2,487*l.*, and the cost of the complete premises has been about 8,200*l.*

LUTON WELLINGTON-STREET BAPTIST SCHOOLS AND INSTITUTE.—The foundation stones of these buildings were laid on the 17th ult. The building is designed in late Gothic freely treated, facing in red brick, dressings Bath stone. The contract is let to Messrs. T. & E. Neville, Luton, the amount being 5,000*l.* 7*s.* 1*d.* The architects, whose design was selected in competition, are Messrs. George Baines & Son, Clement's-inn, Strand, London, W.C.

NORTH LONDON COLLEGIATE SCHOOL, N.W.—Extensions are being made to the North London Collegiate School in Sandall-road. The additions consist of an end cloister on the ground and first floors to the existing hall, with a gallery beyond, new staff-rooms, domestic economy rooms, classrooms for nature study, botany-room and conservatory, new science-rooms above, and a corridor with a staircase, from the new entrance level with the street. Above the four floors of this addition a tower-room for weather observation is provided. The general walling is in red brick with dressings to windows, etc., of Hartham Park stone. Mr. John T. Lee is the architect of the work, the builders being Messrs. J. Simpson & Sons.

PROPOSED NEW REFORMATORY SCHOOL, CALDER FARM.—Owing to the inadequacy of the existing premises, the Committee of the Reformatory School, Mirfield, have formulated a scheme for providing a new school, which is estimated to cost 10,000*l.* The plans for the new building have been prepared by Mr. Berry, of Huddersfield, and are now at the Home Office awaiting sanction. Most of the work, it is stated, will be done by the boys under supervision.

COUNCIL SCHOOLS, SMETHWICK. — Infants' schools have been opened in Waterloo-road, Smethwick, by the local Education Committee. The plans for the work were prepared by Mr. F. J. Gill, architect.

OXFORD UNIVERSITY.—The Drapers' Company have offered to contribute a capital sum of 22,000*l.* for the erection of a new laboratory on the north side of the museum, abutting upon the parks, and a sum of 1,000*l.* for equipment. It is understood that the plans and designs for the new buildings will be prepared by Mr. T. G. Jackson, R.A. The science laboratories at Jesus College were opened on June 23; they have been established for scientific research by graduates in the west wing of the buildings facing Stone-street, and are named after Sir Leoline Jenkins, a former distinguished Principal of the College. The accommodation consists of two rooms on the second floor which are fitted as a chemical laboratory for twenty students, a ground floor for the study of elementary physics, and, on the intermediate story, preparation and tutor's rooms, with a lecture-room for 100 students.

ESTATE DEVELOPMENT, DUNDEE.—Messrs. J. & F. Salmond, architects and civil engineers, have been instructed by the proprietors of Dudhope estate to prepare a scheme for the feuing of policies of Dudhope House. The total area of the ground surrounding the house is said to be about 19 acres, and the preliminary proposals have been submitted to the Town Council for approval.

WORKMEN'S INSTITUTE, ETC., CARDIFF.—Institute premises are being erected by Messrs. Thomas Owen & Co., Ltd., for their employees. The building is of the bungalow type, with a verandah along the full frontage, and the accommodation consists of reading-rooms, club-room, and a lavatory and bathrooms. Contemporary with the erection of the institute Messrs. Thomas Owen & Co. are erecting a large building for the manufacture of paper. Both works are being carried out from designs by Mr. John W. Rodger, architect, Cardiff, Messrs. Blacker Brothers, of Cardiff, being the contractors for the institute, and Messrs. Knox & Wells for the warehouse.

BILLIARD-HALL, CARLISLE.—A billiard-hall has been erected by Mr. Dobson, of Byker, from a design by Mr. H. H. Hodgkinson, architect, in Botchergate, Carlisle. The building consists of a main hall with circular roof, and lighted from the top, with three private flat-roofed rooms at the east-end, lavatory, and other necessary accommodation. The builders were the executors of the late Mr. James Beaty; the joiner, Mr. Martin; plasterers, Messrs. Harrington Brothers; plumber, Mr. W. J. Wilson, all of Carlisle. The steel roof was fitted up by the Glasgow Steel Roofing Company, and the tables have been furnished by Messrs. Burroughes & Watts. The heating apparatus was installed by Messrs. Emley & Son, Newcastle.

COTTAGE HOMES, SUNDERLAND. — Cottage homes have been erected by the Sunderland Guardians for the local workhouse children. The homes are situated in the workhouse grounds, and comprise five detached blocks, each containing two complete homes for fifteen children. Each home is to be in the charge of a foster mother, the total accommodation being for 150. The buildings have red brick ground floors, rough-cast first-floor stories, red-tiled roofs, and overhanging eaves. The central block is treated in half-timber work as a central feature. The detached outbuildings, including washhouses and conveniences, are situated at the rear of each block. The heating throughout is by open fireplaces, and all the apartments are cross-ventilated. Mr. W. B. Cooper is the contractor, and Messrs. W. & T. R. Milburn, of Sunderland, the architects. The new buildings have cost 12,850*l.*

NEW HOSPITAL, SUTTON COLDFIELD.—The Committee of the Sutton Coldfield Cottage Hospital have established a new hospital for the treatment of accidents and cases of disease other than those of a contagious or infectious character. The building has been so planned by the architects, Messrs. Buckland & Farmer, Birmingham, that all the principal apartments are arranged on the ground floor. The execution of the work was entrusted to Mr. James Bird, of Sutton. The cost, including equipment, has been 2,500*l.*

SEAMEN'S INFIRMARY, RAMSGATE.—The foundation-stone of the new General Hospital and Seamen's Infirmary, West Cliff-road, Ramsgate, was laid a short time ago. The building will consist of two blocks, one of which will be used for the reception of patients and the treatment of casualty cases, and the other will contain the wards accommodating twenty-eight beds altogether. There will also be an operating-room, and accommodation for the medical staff, matron, and eight nurses. Messrs. Woodd and Ainslie are the architects.

NURSES' HOME, WOLVERHAMPTON.—A new home for nurses has been built in connexion with the Wolverhampton and Staffordshire General Hospital at Wolverhampton. The building comprises fifty-three bedrooms, private sittings-rooms for sisters, nurses, and assistant matron, library, visitors' room, a small kitchen, and other offices. The walls of most of the bedrooms are tinted green, as also are the walls of the sitting-rooms and library. The walls of the corridors are cream-coloured, and the floors of the entrance and hall and corridors on the ground floor are finished in Terazzo pavement. The corridors, etc., are heated by radiators under low-pressure hot water, and the sitting-rooms are fitted up with well fireplaces. The building is lighted throughout with electricity. The plan adopted for the building was selected by the assessor (the late Mr. Henry Price, of Manchester) out of 148 designs submitted in open competition. The successful competitor was Mr. Arthur W. Worrall, of Wolverhampton. The contract for the building was placed in the hands of Messrs. George Cave & Sons, and the scheme has involved the sum of 10,000*l.*

BUSINESS PREMISES, IPSWICH.—New premises have been opened by Mr. T. Curtis, fishmonger, in Westgate-street. They have been built from designs by Mr. Frank W. Crossley, architect. The contractors were Messrs. W. G. Fisk &

Co.; Messrs. Mann, Egerton, & Co. supplied the electric light fittings and motor; and Messrs. J. & E. Hall, Dartford, put down the refrigerating plant.

PROPOSED COUNCIL OFFICES, WEYBRIDGE.—An inquiry was held at Weybridge Council-chamber on the 15th ult., by Mr. Edgar Dudley, F.S.I., Inspector of the Local Government Board, into the application of the Urban District Council for sanction to borrow 5,250*l.* for the purchase of property in Church-street, and the adaptation of the same as public offices and a depôt. The Surveyor, Mr. J. S. Crawshaw, gave detailed figures as to the size and valuation of the site and premises. He also produced a plan showing how the rooms were allotted.

ENLARGEMENT OF INSTITUTE PREMISES, POWELL'S TILLERY.—A new wing, consisting of reading-room and billiard-room with five tables, has been added to Powell's Tillery Institute. The wing, which was designed by Mr. F. R. Bates, Newport, was erected at a cost of about 1,600*l.*

JEWISH HOME IN TOTTENHAM COURT-ROAD.—The foundation-stone was laid recently of the new premises of the Emily Harris Home, situated in Alfred-place, Tottenham Court-road. The new home, of which Mr. Ernest Runtz is the architect, will provide accommodation for forty girls, and will include a restaurant.

SOLDIERS' HOME, SHEFFIELD.—A home for soldiers has been opened in Langsett-road, Hillsborough. The building comprises billiard-room, reading-room and library, recreation-room, a block of cubicles for single men, and three bedrooms, which form married quarters, etc. The cost of the building and land has been about 3,800*l.*, and Mr. Malam Wilson, Sheffield, was the architect.

INSTITUTION OF ENGINEERS AND SHIPBUILDERS, GLASGOW.—The new premises of this body under erection at the corner of Elmbank-street and Elmbank-crescent are nearing completion. The work has been carried out to the plans of Mr. J. B. Wilson, architect, Glasgow. Occupying three floors and a basement, the new premises will consist of lecture-halls, ante-rooms, council and committee rooms, library, reading, and secretarial rooms. The cost will be 30,000*l.*

NEW HOSPITAL, WINDSOR.—The commemoration-stone of the new King Edward VII. Hospital, at Windsor, was laid by His Majesty the King on the 22nd ult. In plan the new hospital consists of a central portion, in which are situated all the administrative departments, including the operating-theatre. A temporary children's ward is placed on the left of this block, which, it is hoped, will later on be replaced by a separate wing for the children. Separated from, but adjacent to, the administration block, on the west, is the out-patients' department, with a waiting-hall to accommodate 100 patients, and the consulting-rooms and dispensary opening from it on either side; also a small theatre for minor out-patient operations, and an X-ray room. A passage leads to a building in which are two wards to accommodate twenty patients in each, with a verandah at the end, on which beds can be placed in the open air. A separate building contains the isolation block for infectious cases. The kitchen, sculleries, etc., are placed on the top floor of the administration building. The nurses' rooms will be on the first floor, and the servants' on the top floor. The method of construction is that of the Frazzi Fireproof Construction Company, consisting of steel framing throughout, the intermediate spaces being filled in with Frazzi blocks, rough-cast on the outside and plastered on the inside, the floors of the wards, kitchens, and operating-theatre being fireproof. The isolation block and mortuary, and mortuary chapel, are built of thick slabs without steel framing. The contracts have been divided between Messrs. J. L. Hollis & Sons, Windsor, and Messrs. Watson & Sons, Ascot. Mr. A. W. West, London, designed the building. The estimated expenditure, including furniture, is 20,000*l.*

PROPOSED ADDITIONAL WORKHOUSE ACCOMMODATION, KINGSTON.—The Kingston Board of Guardians have adopted the plans prepared by Mr. Hope, architect, for extensions at the Workhouse. The additions, when carried out, will provide accommodation for over 150 persons.

CLYDE TRUST OFFICE, GLASGOW.—The new buildings for the extension of the Clyde Navigation Trust offices at the corner of Robertson-street and Broomielaw are now almost completed. The new portion has a frontage to Robertson-street of 85 ft. 7 in., and a frontage to the Broomielaw of a little over 45 ft. It is four stories in height, surmounted by a dome, at the base of which are some sculptured colossal figures. The architects are Messrs. John Burnet & Son, Glasgow.

HOSPITAL EXTENSIONS, TOLWORTH.—Additions have been made to the Tolworth Isolation Hospital. Chief of the new buildings is the separation block, which contains twelve wards, designed to accommodate one patient each. The wards, which are separated from each other by thick glass partitions, are divided into two groups, with the nurses' duty-room in the centre, one section being intended for the reception of male cases and the other half being reserved for female patients. Enlargements have been made to the administrative block, and a discharge block has also been erected and a proper mortuary provided. The building operations have been carried out by Messrs. Spencer, Santo, & Co., from Mr. W. H. Woodroffe's designs.

ENLARGEMENT OF CRIPPLES' HOME, PRESTWICK, N.B.—An extension has been made to the Biggart Memorial Hospital Home for Cripples at Prestwick. The enlargement comprises a new ward capable of containing thirty beds, and an isolation pavilion to provide accommodation for any infectious case that may occur in the home. The extension has been carried out, at a cost of about 2,000*l.*, to plans prepared by Mr. H. Campbell, architect, Glasgow, and the principal contractors were Messrs. Dewar & Elliot, Glasgow, mason work; Mr. M. Henderson, Glasgow, joiner work; Messrs. Fyfe & Allan, Glasgow, plumber work; Messrs. D. & J. Mackenzie, Glasgow, plaster work; and Messrs. John Orr & Sons, Glasgow, painter work.

GOLF PAVILION, MARYPORT, CUMBERLAND.—A new pavilion has been erected by the Maryport Golf Club at Bank End. Mr. John Clark, agent for the Netherhall estate, was the architect, and the contractors were:—Mason work, Mr. W. Marshall, Maryport; joiner work, Mr. T. Penrice, Birkby; plastering, Mr. T. Kirk, Netherton; painting, glazing, and decorating, Mr. J. McKay, Maryport; and plumbing, Messrs. T. Mandle & Co., Maryport.

COUNCIL SCHOOL, GENDROS.—A new County Council school has been opened at Gendros, near Swansea. The architect was Mr. Nash, of the County Council, and the contractors were Messrs. J. & S. Weaver, of Manselton. Accommodation is provided in the new school for 400 children.

BRIGHTON PALACE SCHEME.—At a further conference between the General Purposes Committee of the Town Council and the representatives of the promoters of the proposed summer and winter palace on the western front of Brighton, the question of the possible effect upon the beach on the east side of "scour" caused by the erection of the sea wall, which is part of the plan, was especially considered. Sir Douglas Fox submitted plans and sections, and notes as to the tides, and gave it as his deliberate opinion that, with certain modifications, there would be no danger whatever of any "scour," or other detrimental effect, on the Brighton coast line. Plans were also presented by Messrs. Clayton & Black showing a new design for the front elevation to the King's-road.

PARISH-HALL, NEW CATTON, NORWICH.—A new parish-hall has been erected in the St. Luke's district of New Catton. The building has a front of stucco and brick. There is seating accommodation for 400 persons. The work has been carried out by Mr. J. S. Smith, of Norwich, from plans by Sir Arthur Blomfield & Sons. The total cost has been about 1,400*l.*

CANONBURY TOWER, ISLINGTON.—This highly-interesting building, of which a brief historical account appeared in our columns of September 7 last, has been repaired and renovated for the Marquess of Northampton, under the directions and superintendence of Major Dance. Lord Northampton has built an assembly-hall as an adjunct to the tower, which is now adapted for a clubhouse on behalf of the tenants on the Compton estate, and the new building will be known as King Edward Hall. During the works in the tower some fine specimens of oak panelling were discovered.

TRADE NEWS.

MESSRS. ARCHIBALD D. DAWNAY & SONS have taken contracts for the constructional steelwork and fireproof floors, upon their system, at the extensive additions to the Convent de Notre Dame, Southwark (Mr. J. C. Radford, architect); also for the constructional steelwork, roofs, and fireproof floors of the "Coopers Foundation" Stepney and Bow Schools (Messrs. A. E. Munby and T. P. Figgis, joint architects); and also the constructional steelwork and fireproof floors at Messrs. Chaplin & Co.'s new stabling and warehouse at Reading (Mr. G. W. Webb, architect).

Messrs. D. G. Somerville & Co. have secured the following contracts for reinforced concrete and structural steelwork:—Large residence at West Cowes; further extension to Ediswan Electricity works; galleries and floors for Electric Lamp Company, London; Anglo-South American Bank, Old Broad-street; National Telephone premises, Deptford.

Messrs. McDowall, Steven, & Co., kitchen engineers, London, have recently completed the kitchen equipment of the Skegness and Seacroft Hydro, and also the Home for Aged Poor at Wandsworth. This firm has further been entrusted with the carrying out of the entire kitchen installation at the new Workhouse, Homerton, for the City of London Union; and they have also in course of construction at present the kitchen apparatus required for Epsom College.

The plastering generally to be done at the Infirmary, Nurses' Home, etc., at Ouseley and St. James' roads, Wandsworth Common, is to be executed in sirapite plaster by the Gypsum Mines Company, and something like 38,000 yds. of plastering is to be done.

A large church clock is being made for Tenby, which will strike the hours and have three large dials. It will be fitted with all the latest improvements, and made generally to the designs of the late Lord Grimthorpe. The work is being done by Messrs. John Smith & Sons, Midland Clock Works, Derby.

Sanitary and Engineering News.

MANSFIELD WATER SUPPLY.—Work has been begun on the construction of the duplicate water supply for Mansfield at Clipstone. Contracts have been entered into with Messrs. Rollinson & Son for sinking and proving the well for 4,801*l.*, Mr. H. Ashley for laying the pumping main for the sum of 11,197*l.*, Messrs. Lane for buildings 3,869*l.*, and for machinery at a cost of 5,547*l.* Mr. F. Walter Hodson, M.Inst.C.E. (of the firm of Messrs. G. & F. W. Hodson, Loughborough), is the engineer of the scheme.

NEW RESERVOIR, DUNDEE.—The work of improving the Stobsmuir Reservoir will be completed in the course of the next few weeks. The alterations are estimated to cost 7,000*l.* Mr. George Baxter, the Water Engineer, prepared the plans for the reconstruction. The roofing of the pond is being carried out on the Kahn system of reinforced concrete. The contractors, the Trussed Concrete Steel Company, Ltd., London, local tenders not being forthcoming, entrusted the execution of the work to Messrs. John Ellis & Sons, Leicester. Mr. Harry Roberts is in charge of the work.

SEWER VENTILATION.—Dr. G. Quin Lennane, Medical Officer of Health for the Borough of Battersea, in his annual Report, which has just been issued, writing of sewer ventilation, says that the provision of a greater number of open-air ventilating grids in the middle of the roadways, except in the cases of narrow streets or courts, would, in his opinion, greatly tend to minimise the nuisance which occasionally is complained of in the borough. The erection of upcast ventilating shafts cannot, he believes, take the place of the surface grid for ventilating purposes. The former may form a useful combination with the latter, but of themselves upcast shafts, owing to friction due to bends in the pipes, etc., are of necessity incapable of fulfilling the object intended. The danger to health from open-surface ventilating grids, especially in wide thoroughfares, is not, in his opinion, a matter for serious consideration. The occasional nuisance which undoubtedly does arise from their presence is compensated for by the knowledge that sewer emanations must necessarily be less harmful in the open air, where they rapidly become diluted and innocuous, than when accumulating in the sewers. Under such circumstances the gases may become at times, especially in foul and badly-ventilated sewers, sufficiently concentrated to force the intercepting traps of the house drains. Just as pollution of the room air is prevented by efficient ventilation, so will sewers be prevented from becoming a nuisance or a danger to health when they are provided with an adequate supply of air inlets and outlets, to ensure a free flow of fresh air through them. Putrefaction of their contents is in this way prevented, and while at times, owing to the operation of well-known physical laws, fresh-air inlets may become outlets, less nuisance is likely to arise, and certainly little or no risk to health.

SEWERS OF BROMPTON-SQUARE.—In consequence of complaints, the Borough Engineer of Kensington has examined the sewers of Brompton-square, and reports that they are in a defective state. It has been decided by the Borough Council that the Borough Engineer be instructed to prepare the necessary drawings, specification, and estimate for abolishing the old sewers and constructing new sewers in the square, and that advertisements be issued in due course inviting tenders for the execution of the works.

SEWERAGE SCHEME, BUNDORAN.—Mr. A. D. Price, Engineering Inspector to the Local Government Board, held an inquiry in

Bundoran recently into the application of Ballyshannon Rural Council for sanction to a loan of 1,350*l.* for the purpose of completing the Bundoran sewerage scheme. Mr. James Steadman, County Surveyor, is the engineer for the scheme.

PROPOSED EXTENSION OF DOCK ACCOMMODATION AT ABERDEEN.—Mr. R. Gordon Nicol, C.E., Engineer to the Aberdeen Harbour Commissioners, has prepared a report dealing with the subject of additional dock space for the general traffic at the port, but more particularly for the accommodation of the fishing industry. The report, which covers two schemes, treats first of that which utilises the ground at Torry, which the Commissioners purchased a few years ago from the Aberdeen Land Association and from Colonel Davidson, of Balnagask, at a total cost of 85,000*l.* The Engineer proposes that this area should be turned into docks opening into the River Dee, providing a total area of 54 acres of quay and water space. The other scheme includes an extension of the wharf known as Port Mearns Quay, on the north side of the Dee, for a distance of 1,400 ft. westwards, in order to allow of the necessary deepening of the river. There is also a proposal to straighten and deepen the berths on the south side of Albert Basin, involving the construction of 1,555 ft. of wharf. These works are estimated to cost 220,000*l.* They would be carried out in sections. The report contains an alternative scheme for a dock at the south end of the Links, with the entrance cut through Pocra Pier near its junction with York-street, the estimated cost being 362,000*l.* It is proposed to construct the wharves of reinforced concrete.

IMPROVEMENT OF THE HARBOUR, WHITBY.—The local urban governing authority at Whitby are inviting tenders for the execution of a scheme of harbour improvement, which is to be commenced in August. Up to the present the depth of the channel between the pier-heads at Whitby has averaged about 2 ft., and from the pier-heads to the harbour quays only about 1 ft. The breadth of the channel varies from 50 ft. to 80 ft. Its course, instead of being midway between the piers, is close to the outer arm of the east pier, and at the inner end of that arm it takes a sharp bend. There is a dangerous sand bar immediately outside the pier-heads, which is continually tending to close the entrance channel, and at periods of drought in the river it actually does so. It is now proposed (1) to construct two piers to seaward of the present piers; (2) to dredge a new channel between Whitby Bridge and the new pier-heads, having a depth of 7 ft. below low water of spring tides; and (3) to construct a fish-landing quay of about 700 ft. in length on the west side of the harbour between the Marine-parade and Scotch Head. The new piers will be built of solid concrete in one continuous mass, and founded throughout upon the alum shale rock. Each pier will be about 500 ft. in length, and the top of the concrete 7 ft. 6 in. above high-water level. Above this there will be a timber promenade deck 21 ft. above high water carried upon creosoted piles built into the piers. At the outer ends of the piers the concrete will be widened to form vertical round-heads, upon each of which there will be a small timber lighthouse. The promenade of the new west pier will be connected with the present pier-head by a bridge, consisting of steel girders and timber-work, whilst the promenade of the east pier will be connected with the present pier-head by a similar bridge, and a timber jetty over the intercepting wall. The new channel will have a length of 2,595 ft. from the piers to the bridge, its minimum breadth will be 75 ft., and its maximum breadth 187 ft. The work of dredging includes the blasting and removal of rock and shale. The landing quay is to be constructed of open piling, framed and braced, and decked with close planking. The scheme, which will be carried out to the designs and under the supervision of Messrs. I. Watt Sandeman & Son, consulting engineers, Newcastle-on-Tyne, is expected to take three years to complete, and to involve an outlay of about 73,492*l.*

LONDON COUNTY COUNCIL'S NEW SEWERS, AND FLOODS.—The Works and Highways Committee of Lewisham Borough Council report having received several complaints from residents in various parts of the borough of the flooding of their premises on the occasion of a recent storm. The Borough Surveyor, in a report, states that considerable flooding took place on June 4 (when 1·44 in. of rain was registered in less than an hour). The London County Council's new sewer from Crossness to Lewisham was entirely open, and the sewers in High-street, Lewisham, and High-road, Lee, were directly connected with it. The Surveyor was disappointed to find that with a free outlet the London County Council's sewers were surcharged at Bell Green, and the sewage blew out of the Borough Council's sewer in Kent House-lane, opposite the end of Stanton-square, in large volumes, at a point quite close to its junction with the London County Council's sewer. The sewage did not come out of the gratings on the London County Council's sewer because the surface of the same is some 3 ft. above the level of the surface of Stanton-square. The Surveyor is of opinion that the surcharge of the water in the London County Council's sewer backed up the Borough Council's sewers right the way to Sydenham, and accounted for the flooding in Jew's-walk, Kirkdale, Sydenham-road, and that the flooding of Ladywell was caused in a similar way.—The Works and Highways Committee have directed that the attention of the London County Council be called to the fact that, notwithstanding the construction of their new sewer, the existing sewers southwards are insufficient in capacity, and that further provision is urgently needed.

OLD SEWERS IN KENSINGTON.—Complaints have for some time past been made as to sewer smells in Brompton-square, S.W. The Borough Engineer of Kensington, who investigated the matter, reported on Monday that the nuisance was caused by the defective design and construction of the sewers, they being 5 ft. 4 in. by 3 ft., and 4 ft. 6 in. by 2 ft. 6 in., with straight side walls, and inverts of large radius. These sewers were laid down between 1824 and 1834. Their large size is quite unnecessary for the drainage requirements; their shape precludes a proper flow of sewage; the brickwork of the side walls is decayed and saturated; and the flow at some points being in the wrong direction causes the sewage to stand in pools. The Works Committee decided, on the foregoing report, to substitute for the obsolete and defective sewers new stoneware pipes. Tenders for the work are to be called for in due course.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Mr. Henry Lovegrove, District Surveyor for South Islington and Shoreditch, has removed his office from 169, High-street, to 124, High-street, Shoreditch.——Mr. W. H. Ansell, architect, has removed from 18, Guilford-street, Russell-square, to 10, New-square, Lincoln's Inn, W.C. (Telephone number 3,730 Central).——Messrs. C. Pearson Shaw, Son, & Hemingway, quantity surveyors, arbitrators, and valuers, have removed from Pelham-chambers, Angel-row, to 14, Sherwood-street South, Nottingham.

NORTH OF ENGLAND COTTAGE EXHIBITION.—We hope to give a review of this exhibition shortly; at present, like other exhibitions, it appears to be in a rather unfinished condition.

DR. BARNARDO MEMORIAL, BARKINGSIDE.—On Friday, June 19, the Duchess of Albany unveiled a memorial in the Girls' Village Home at Barkingside, Essex, to the founder of the institution, the late Dr. Barnardo. The memorial consists of a composition of three children, sculptured in bronze, with a portrait medallion of Dr. Barnardo, and, on the granite pedestal, a female figure with two infants—emblematical of Succour and Charity. The work was designed and executed by Mr. George Frampton, R.A.

LABOUR TROUBLES IN BERLIN.—H.M. Consul (Mr. Schwabach), in his report for 1907, states that the number of strikes and lock-outs swelled again in the year under review. These labour disputes show clearly how again and again the workmen began strikes without any thought as to whether the moment was favourable and heedless of consequences; hence their attempts were generally fruitless. For instance, the greatest labour dispute during the year under review—the lock-out in the building trade in Berlin—only resulted in injury to the workmen and serious damage to the national wealth. About 100,000 workmen were without work or wage for weeks, mainly because the workmen demanded that the working day should be shortened, and that barely by one hour, viz., to eight hours. This demand had to be resolutely refused by the employers, the more so because in many concerns the daily working time is only eight and a half hours; moreover, the building trade is a season trade, so-called because during the winter months and often in cold autumn days even, no work at all can be done. The more prudent leaders of the men earnestly represented to their parties what poor prospects they had of success. However, the latter persisted in their demands, and in consequence were locked out by the employers, who contributed in this manner to avert the impending strike. This labour struggle afforded the employers' associations an opportunity of proving their utility. These employers' associations have been founded of late years in the various branches of the trade. They are sometimes restricted to small circles and sometimes extend over wide districts; their object is to stem the growing power of the trade unions. Through this almost complete organisation, acting thus in concert, the employers were enabled steadily to oppose the demands of the workpeople throughout the protracted struggle.

THAMES CONSERVATORS.—At the meeting of the Board recently, permission was given to the Associated Portland Cement Manufacturers, Ltd., to construct a T-jetty, with a frontage of 50 ft. and extending 70 ft. into the river at Cliffe Creek. Permission was also given to the Tilbury Contracting and Dredging Company (1906), Ltd., to lengthen by 66 ft. the head of their jetty at Tilbury. Stepney Borough Council applied for leave to construct an embankment and place two 36-in. suction and discharge pipes in the river at Byth's Wharf generating-station. The required sanction was given, subject to protective conditions. Walton Urban District Council wrote offering to improve the Walton wharf by laying down stone-pitching and tar-paving, at an estimated cost of 210*l.*, if the Board agreed to refund the Council half the amount expended. This the Board agreed to do.

NEW DOCK FOR BUILDING WARSHIPS AT BORDEAUX.—The "Ateliers et Chantiers de la Gironde," the shipbuilding yards from which the French battleship *Vérité* was launched in 1907, are preparing for the construction of warships of increased tonnage. It being no longer safe to launch these vessels with their machinery complete, the hulls of future men-of-war will be launched as soon as ready and towed into a dock alongside the building ships. The length of this new dock, which narrows at the end farthest from the entrance, is 181 metres (594 ft.), its main width 37 metres (122 ft.), width at entrance 33 metres (108 ft. 3 in.), and depth 11 metres (36 ft.).

ORGAN-CASE, DULWICH COLLEGE.—The organ in the great hall of Dulwich College has recently been reconstructed and enlarged, new fronts and cases being at the same time added. Completion of the work was announced at the college on "Founder's Day" the 20th ult., by Canon Carver, formerly headmaster of the college, to whose munificence the original organ and the new cases are due. The organ is symmetrically arranged on two opposite sides at the western end of the hall, and flanking the stage. Each portion has two fronts, one towards the body of the hall, and the other towards the stage, with central towers flanked by two side towers. The cases are designed in the Renaissance style of the late XVIIth century, and are executed in oak with carved aprons and panels, and with white-metal pipes. The work has been carried out by Messrs. Walford & Spokes, of Oxford, from the designs of Mr. W. H. Atkin Berry, of London.

TERRA-COTTA WORKS, BURLEY, HANTS.—Having in view the encouragement of fictile terra-cotta work in Dorset and Hampshire, Lady Baker, of Ranston, has undertaken to erect and establish a kiln at Burley, in the parish of Ringwood, Hants, where an abundant supply of suitable clay exists, and will shortly give an exhibition of objects made in the manufactory there.

ANSTY GREEN SANDSTONE.—For centuries past the quarries at Ansty, in Wiltshire, have been worked in a primitive way, yielding a variety of sandstone which has been used locally to a considerable extent. The quarries are on the Wardour Castle estate, and have recently been leased by Messrs. T. T. Gething & Co., from whom we have received a sample of the stone. This material consists of grains, some almost colourless, others of a pale yellowish green, and others again almost black, apparently cemented by carbonate of lime—a substance whose presence is further manifested by small patches and veins here and there. The stone is of soft and uniform texture, and the colour is distinctly pleasing. From the artistic standpoint it seems well adapted for employment in buildings where a subdued tint is desired, and where the glaringly new appearance of lighter coloured masonry would be out of place. In pure country air the Ansty sandstone is quite suitable as a material of construction, although not capable of resisting the destructive influence of the atmosphere in London and other large cities.

INSTITUTION OF ELECTRICAL ENGINEERS.—The annual conversazione of the Institution of Electrical Engineers was held at the Natural History Museum, South Kensington, on Thursday of last week. The guests were received by the President and Mrs. Crompton. An excellent programme of music was performed by the string band of the Royal Engineers and the Alexandra Ladies' Quartette. Several of the recent additions to the museum are of special interest and attracted much attention.

OIL-TAR TREATMENT OF MACADAM ROADWAYS.—The Borough Surveyor of Fulham reports that he has now spent the 150*l.* which he allocated out of the vote for watering roads in treating about thirteen miles of macadam roadway with oil.

From inquiries he had had demanding other roads to be treated similarly, he thought that it had proved highly satisfactory in laying the dust, and, as he anticipated, it had been the means of reducing the quantity of "grit" that was taken from the roads by the scavengers. Approximately 700 tons less slop had been collected this year as against the same period last year. This, of course, meant a saving on the amount paid for its disposal and the employment of fewer horses. He did not suggest that the whole of this saving had been caused by the use of oil-tar, but that it had been the chief factor. A continuance of this treatment would undoubtedly bring about a better condition from the point of view of the dust and the cost of its adoption will be assisted by the saving in other directions.

NEW LAW COURTS BUILDING.—In the Parliamentary Papers last week, Mr. Alden inquires whether a Select Committee could be appointed to consider whether a rearrangement of the courts and rooms at the Law Courts might be made which would obviate the necessity for building upon the existing gardens and open space.—Mr. Harcourt, Chief Commissioner of Works, replies that no rearrangement such as suggested is possible.

BRITISH BUILDERS AND GREEK MARBLE.—The marble quarries of the Piræus, in Greece, are controlled, with a few unimportant exceptions, by a large company, and the British Consul, in his annual Report (just issued by the Foreign Office), states that active work was carried on at the various quarries throughout the year. Considerable interest has recently been taken in this marble by British builders and architects, and a large demand also has arisen for the finest white monumental and statuary marbles. At Skyros, which furnishes some of the finest varieties of coloured marbles, the company has set up new machinery, and helicoidal wire-sawing plant and other installation will be completed this year. A great demand for this class of stone exists on the Continent. In Eubœa the company has moved from one quarry to another, but permanent installation will be made at the new Cipollino quarries at Karatzas, where a finer marble than ever was found in the old quarries has been discovered. It appears from statistics given by the Consul that the larger part of the shipments of marble from the district in 1907 came to the United Kingdom. Of Pentelicus marble 1,637·611 cubic metres were sent to London during the year, of Skyros marble 102·029 cubic metres, of Styra marble 7·781 cubic metres, and of Tinos marble 23·092. Hamburg, Antwerp, and New York were the other large customers, the demand being greatest for Pentelicus and Skyros marble. Of the former the total exports were 3,600·105 cubic metres, as compared with 653·554 the previous year; and of Skyros marble, 778·889 cubic metres, against 158·715 the year before.

PROPOSED STREET IMPROVEMENTS, LEIGH.—Major J. Stewart, R.E., Local Government Board Inspector, recently held an inquiry at Leigh with reference to the Council's application for sanction to borrow 4,808*l.* for works of private street improvements. The work proposed is sewering Leigham Court-drive (part), Leigh Court-road (part), Marine-avenue, Wesley-avenue, Oakleigh Park-avenue, and Ronald Hill-drive; and improving Pall Mall and Canonsleigh-crescent. Mr. W. Liversedge is the Council's Surveyor.

NEW GOVERNMENT BUILDINGS IN KENSINGTON.—The Kensington Borough Council have approved of the plans submitted by Messrs. Leslie & Co., Ltd., on behalf of H.M. Office of Works, for permission to construct vaults in Imperial Institute-road in connexion with new Post-office and Meteorological Office buildings to be erected on the south side of that roadway at its junction with Exhibition-road.

WIDENING OF KENSINGTON HIGH-STREET.—The Works Committee of the Kensington Borough Council have received from Messrs. Chesterton & Son, on behalf of Sir Walter Phillimore, a communication pointing out that a decided improvement would be effected in Kensington high-street if the projecting shop fronts from Nos. 98 to 106 were removed. Sir Walter was willing to make arrangements with his tenants occupying one shop if the Council would take steps under Michelangelo Taylor's Act to secure the other fronts for widening the public way. After viewing the site the Committee recommend that no steps be taken to carry out the improvement in view of the large expense which would be involved.

HYGROSCOPIC DUST-LAYER.—The Works Committee of the Kensington Borough Council reports having had before them a report by the Borough Engineer on the subject of the experiment conducted as to the advantages of an hygroscopic dust-layer with which a portion of the roadway of Queen's-gate has been treated, giving carefully-prepared statistics as to the cost of using this particular material as compared with the cost of the ordinary watering and cleansing of the area of roadway in question. Whilst there is no doubt that the experiment has resulted in the quantity of dust arising from the roadway in the portion of thoroughfare referred to being considerably lessened, it would appear that the cost of using the dust-layer has been some 25 per cent. in excess of the ordinary watering and cleansing expenditure. The Borough Engineer has pointed out that the result might have been less unfavourable as regards cost had not a heavy rainfall followed the first dressing of the surface of the road with the material; but, having regard to the increased expenditure and other circumstances in connexion with the treatment of roads with this dust-layer, they did not favour its further use.

SAMPLES OF BRICKS.—Messrs. C. H. Norris, Ltd., of Erith, send us a small box of what may be called miniature samples of their sand-faced bricks, which they are making in any size from 2¼ in. to 2 in., in order to avoid, as they say, "the annoyance large samples of bricks cause to architects." This refers, we presume, to samples sent unasked, in order to call attention to goods made by the firm; and in that case the sending of a miniature sample brick will certainly be preferred by architects to a box of full-sized bricks. But it would not be wise to base a final selection of the brick for use on a building on anything but an inspection of the full-size brick.

WATER SUPPLY TO TENEMENT HOUSES.—In a report issued on Monday, the Medical Officer of Health of Bethnal Green, Dr. G. Paddock Bate, says that it seems that the clause as drafted in the London County Council (General Powers) Act, 1907, for enforcing a supply of water to the upper stories of tenement houses will not work out in quite such a beneficial manner as was the intention of the promoters of the Act. In the working of this clause, remarks the Medical Officer, there is found, as usual, many difficulties, although the short time which has elapsed is obviously too brief a period in which to form a conclusive opinion as to the real practical value of the clause. Having regard to the internal structural arrangements of many premises in Bethnal Green, the applications of the provisions of the clause are impracticable in a number of cases. In some instances there is very good reason to anticipate that the sink, which must be fixed under the water taps in the upper floors, will be largely used as slop-sinks for disposing of liquid filth. From a sanitary point of view this would be most objectionable and calculated to cause serious nuisance. In many cases where a supply of water to the upper stories is of great consequence, it is found that the height of the premises exceeds that to which the Metropolitan Water Board is required to furnish a supply.

NEW PARK, TUNSTALL.—The laying-out of the new park at Tunstall is approaching completion. The work is being carried out from the designs and under the direction of Mr. A. R. Wood, the Town Surveyor. The main gates to the park, erected in memory of the late Mr. Thomas Peake, are in three sections, and are hung upon four piers. They are the work of Mr. W. Durose, of Tunstall, and the stonework has been executed by Mr. W. Bonner, also of Tunstall.

BRITISH QUARRY OWNERS AND FOREIGN GRANITE.—At the annual meeting of the United Kingdom Granite and Whinstone Quarry Masters' Association, one of the questions that received particular attention was the use of foreign stone, in the shape of setts, kerb, and channel for street and road work. The Association strongly expressed the view that the home quarry owners have a distinct grievance in respect that a number of public bodies throughout the kingdom, when inviting tenders for setts, kerb, and channel, specify that the material to be used shall be either Norwegian, Swedish, or other foreign stone. The hope was expressed that the superiority of the home stone would soon be recognised by all public bodies having the control of large public works. Reference was also made at the meeting to the large quantity of stone which would be required in the execution of the naval base at Rosyth, and the Association agreed to use its utmost endeavour to secure that the stone to be used in the construction of the work be of British product.

THE LABOUR MARKET IN THE COLONIES.—The July circulars of the Emigrants' Information Office, 31, Broadway, Westminster, S.W., state that the only classes of emigrants wanted in *Canada* at the present time are experienced farm labourers, or farmers financially able to take homesteads or purchase lands. No more men are wanted for work on railway construction; and mechanics and unskilled labourers are recommended not to emigrate to Canada now, unless they have means of their own or go to assured work or to friends; they should first apply to the Emigrants' Information Office. In *Australia*, competent carpenters, blacksmiths, wheelwrights, bricklayers, masons, and others can get work in many country districts, and skilled miners at the Broken Hill Mines in New South Wales. Emigrants should leave the capitals as soon as possible, and make for the country districts. In *South Australia* the building trade is busy, and there are openings for competent men, but the copper mines are now well supplied with miners. With regard to *New Zealand*, special attention is drawn to the fact that persons suffering from consumption are prohibited from entering the Dominion; and at present there is no demand for more mechanics or labourers. In *Cape Colony* the supply of men in the building and engineering trades, and in factories, exceeds the demand in all the principal towns of the colony, and especially in Kimberley. In *Natal* the local supply of labour is ample for all requirements. Emigrants, other than female servants, are warned against going to the *Transvaal* in search of work.

THE MALL IMPROVEMENTS.—In the House of Commons on Tuesday, Mr. W. Rutherford asked the First Commissioner of Works what was the object or utility of the three parallel tunnels now in course of construction at the proposed entrance to the park from Trafalgar-square; what was the length of each tunnel and the width; whether artificial light was proposed to be used in each tunnel; whether the centre tunnel was intended to be a reserved tunnel, and, if so, under what conditions; who was responsible for the design, and what style of architecture, if any, it was supposed to be; whether the buildings would eventually take the form of a "semicircus" on each side; what was the estimated cost of the buildings constituting the circus and the tunnels; what the buildings were proposed to be used for; and whether he would be willing to give reasonable notice to Parliament before undertaking any works of a similar type.—Mr. Harcourt: The three arches through the new building at the end of the Mall are to convey the traffic from St. James's Park to Trafalgar-square. They vary in length from 37 ft. to 50 ft., and the width of each is 20 ft. No artificial light will be used or required except at night. The centre arch is intended for State occasions. The design was made by Sir Aston Webb, R.A., under directions from the late Government. It was exhibited in the tea-room of the House for several months before the work was begun, and the hon. member had ample opportunities of objecting to any portions of it which offended his artistic taste. If there is such a word in the English language as "semicircus," it does not accurately describe the form which the buildings will ultimately take. The cost of the building is provided partly by the Public Buildings Expenses Act of 1903, and partly from moneys voted by Parliament after full discussion in this House. The total estimated cost is 180,000*l.* The buildings will provide for an extension of the Admiralty, and for residences for the First Lord and the First Sea Lord in lieu of those now occupied by them. It is not at present intended to undertake any other works of a similar type, but if any such were projected due notice would be given to Parliament, as was done in relation to the present building, and no work would be commenced until votes had passed the House of Commons.—Mr. W. Rutherford: Does the right hon. gentleman not think it would have been better to have allowed the public entrance to the park to be open instead of under a tunnel?—Mr. Harcourt: I am not inclined now to criticise the decision of my predecessors.—Major Anstruther-Grey: When will it be fit for traffic?—Mr. Harcourt: I should think that some time next year we shall be able to admit traffic through.

UNIVERSITY OF LIVERPOOL.—The Council of the University, at their meeting on the 30th ult., acknowledged with thanks the gift of travelling scholarships for this year from Mr. C. S. Jones and Mr. Edward Whitley. Each scholarship is of the value of 25*l.*, and enables the holder to travel during the vacation, and to study types of the best architecture on the Continent. These scholarships are in addition to that already provided by Miss E. G. Holt.

PARISH CHURCH OF ST. GEORGE, BLOOMSBURY.—A faculty was granted on June 26 by the Consistory Court of London to enable the rector and churchwardens to carry out certain arrangements arrived at in arbitration with the proprietors of Kingsley and Thackeray Hotels, Ltd. The matter arises from the apprehension that the contemplated enlargement of the Kingsley Hotel, on the Little Russell-street site at the rear, to a height of 87 ft. (50 ft. higher than the old buildings) would greatly interfere with the light in the church. It being desired to avoid litigation, the services have been engaged of Mr. A. A. Hudson, barrister-at-law, whose award, thus far, provides for the facing, with white glazed tiles, of

the side wall of the new building from a line at a level of 22 ft. upwards, for the cleansing and repair of the tiled wall once in three years, and for the payment of a nominal rent of 1*l.* per annum. The Court will give such further directions as may be necessary in respect of any sum which the arbitrator may finally fix in compensation or damages for injury to the light in the church. A similar agreement was confirmed by a faculty granted by the Chancellor, Dr. Tristram, K.C., in 1899 at the time of the erection of the Kingsley Hotel on the east side of the church in Hart-street, when an action for injunction brought against the owners of the hotel was settled upon payment of 1,200*l.* and the facing, with white glazed tiles, of the entire west wall of the building overlooking the church.

Law Reports.

ACTION BY THE WESTMINSTER CITY COUNCIL.

IN the Chancery Division last week Mr. Justice Warrington concluded the hearing of the case of the Mayor, Aldermen, and Councillors of the City of Westminster *v.* the Rector and Churchwardens of St. George, Hanover-square.

The question in the case was whether the rents of certain houses, known as Hyde Park-place and Hyde Park-place Mansions, in the Bayswater-road, should be applied under the direction of the plaintiffs as successors of the Vestry of the parish of St. George, Hanover-square, for the benefit of the parish, or whether the houses in question were held upon an ecclesiastical trust, the details of which would have to be settled by a scheme. The issue in the case mainly turned upon whether sect. 24 of the Burials Act, 1857, applied to the land and buildings in question or not.

It appeared that the parish of St. George, Hanover-square, was constituted under statutes passed in the reigns of Queen Anne and George I. for the purpose of building new churches in and about the metropolis. By the statutes the affairs of the parish were governed by a select Vestry constituted by an order of Commissioners appointed by the Acts. Until 1855 the rector and churchwardens were members of the Vestry, and until the abolition of Vestries under the London Government Act, 1899, the rector was *ex officio* chairman of the vestry. In 1757 it was drawn to the attention of the vestry that the old burial-ground of the parish of St. George was overcrowded, and 5 acres of ground, being part of Tyburn-field, was acquired for the purpose of burials. Shortly afterwards the Vestry proceeded to build upon part of the land the chapel which stands near the Marble Arch. The Vestry also proceeded to enclose the greater portion of the land for the purposes of burial, and that portion was consecrated in 1765; but the southern portion remained unconsecrated. In 1767 the Vestry granted building leases for ninety-nine years of the plots lying east and west of the forecourt of the chapel, the ground-rents of the leases amounting to 30*l.* a year, and down to 1854 these rents were received by and accounted for by the churchwardens. In 1854 the burial-ground was closed by an Order in Council under the Burial Act, 1852, and a burial board was constituted for the parish and a new burial-ground was obtained. From 1854 to 1865 the ground-rent was paid to the burial board. In 1865 the leases fell in, and the rector and churchwardens, under the direction of the Vestry, granted new leases for twenty-one years at rents amounting to about 2,000*l.* a year, and these rents were applied as part of the general revenues of the parish. These leases fell in in 1866, and new leases were granted. In 1900 the then existing houses were pulled down and fresh leases granted by the rector and churchwardens under the direction of the Vestry, and after 1899 of the City Council. Since 1900 the rents had been kept *in medio*, and the present action was brought for the purpose of having it determined as to how the rents should be applied.

In the result, his lordship held that the rents, after discharging any encumbrances, ought to be applied for the benefit of the civil parish of St. George, Hanover-square, as defined by the Act of 1857, and from time to time modified by statutory enactment as the plaintiffs might direct.

Mr. W. H. Upjohn, K.C., Mr. Brooke Little, and Mr. Gover appeared for the plaintiffs; and Mr. Danckwerts, K.C., Mr. Cave, K.C., and Mr. Errington for the defendants.

SUBSIDENCE OF HIGHWAY.

THE case of the Wednesbury Corporation *v.* the Lodge Holes Colliery Company, Ltd., concluded in the House of Lords, before the Lord Chancellor and Lords Macnaghten and Atkinson, on the 30th ult., on the appeal of the defendant Company from a judgment of the Court of Appeal.

In this case the plaintiff Corporation, as the urban authority for their borough, brought the action against the defendant Company to recover damages for injury caused to a highway called Dangerfield-lane owing to the mining operations of the defendants. The mining operations had caused a subsidence of the road and the surrounding land, and had also caused the surface of the road to break up. The Corporation restored the road as nearly as possible to its original level at a cost, inclusive of the expense of certain incidental works of drainage and fencing, of upwards of 400*l.* At the trial of the action before Mr. Justice Jelf, the defendants admitted liability, but they denied that the measure of damages was what it would cost to restore the road to its original level, their contention being that the proper measure of damages was what it would cost to make the road as commodious for the use of the public as it was before, and that this could have been done at a cost, including the expense of draining the surface, of 60*l.*, and they brought the sum of 80*l.* into Court as being sufficient to meet the plaintiffs' claim.

At the trial Mr. Justice Jelf held that the defendants' contention as to the measure of damages was correct, and entered judgment for them accordingly. The Court of Appeal, however, on the appeal of the Corporation, entered judgment for the Corporation for 400*l.* Hence the present appeal of the Company.

The Lord Chancellor, in the course of his judgment, said that the proceedings at the trial and the preceding correspondence showed that the plaintiffs had not considered how they could make an equally commodious road without unnecessary expense. They took up the position that they were entitled in law to raise the road to its old level, and to charge the defendants with the cost of so raising it. At the trial, as an afterthought, they also contended that the road would not, in fact, be so commodious to the public if it were made up on the lower level at the smaller cost. The point of law which was advanced by the plaintiffs, viz., that they were entitled to raise the road to the old level, cost what it might, and whether it was more commodious to the public or not, would not, in his opinion, bear investigation. Such a rule might lead to a ruinous and wholly unnecessary outlay, and even those who had been wronged must act reasonably, however wide the latitude of discretion that was allowed to them within the bounds of reason. Although the plaintiffs had acted quite honestly, he thought they had done so under the mistaken belief that they were bound, or, at least, entitled, to maintain the ancient level at the defendants' expense. For these reasons he thought that the judgment of Mr. Justice Jelf was right, and should be restored.

The other noble and learned lords concurred, and the appeal was accordingly allowed.

Sir Robt. Finlay, K.C., Mr. Shearman, K.C., and Mr. Disturnal appeared for the appellants; and Mr. Macmorran, K.C., Mr. Hugo Young, K.C., and Mr. McCardie for the respondents on the appeal.

Patents of the Week.

APPLICATIONS PUBLISHED.*

14,915 of 1907.—B. MORTON: *Construction of Warehouse and like Floors.*

This relates to the construction of warehouse and like floors and roofs, and is characterised by the application of "straddles" that are passed over girders or walls, and whose ends are connected to the intervening portion of the flooring or roof that consist of a network of rods bedded in concrete or equivalents, whereby the girders may be placed further apart without detracting from the stability of the structure, and thereby reducing the number required.

15,848 of 1907.—A. C. MOFFATT: *Safety Apparatus for Lifts, Hoists, and the like.*

This relates to safety apparatus for lifts, hoists, and the like, and consists in the employment of a shaft formed with a square or rectangular portion adapted to engage with stops or projections formed in sliding discs or plates.

17,201 of 1907.—E. FIRTH: *Partition Plates or Blocks for Buildings.*

This relates to partition or wall plates or blocks for use in buildings wherein hitherto slabs, or plates, or blocks for walls or partitions have been made of various materials combined together, such as plaster, gypsum, Portland and other cement, coke breeze, and the like, and afterwards moulded to the required shape. The said slabs have been provided with V-shaped tongues adapted to fit into correspondingly-shaped grooves for retaining them in position. This invention relates to a slab or block composed of the refuse from iron-moulders' sand or castings, the refuse from steam or other boilers, the dust from limestone before it is burnt, and the refuse from parian kilns, mixed together and formed into a thin paste by the admixture of water, and cast or formed in blocks with a projecting tongue on one side and end, and with a groove in the opposite end into which the tongues fit, thereby enabling the blocks to be built into walls or partitions and held together by said tongues, and ribs of grout or concrete passed through vertical holes formed therein, and by wooden or other screeds fixed to the floor and framework of the door or other opening in the wall or partition.

17,391 of 1907.—S. EVERED: *Pivot-shoe Attachments of Swinging Doors.*

This relates to pivots or shoe plates which are attached to the bottom of swinging doors, and consists in the shoe plate being cast to a width which is less than the thickness of the thinnest door to which it may be required to be attached, and may be provided with a heel flange at the pivot end. The plate is thickened out to form an internal projection in which the square socket for receiving the pivot is formed, and when fixed is sunk into the underside of the door until its lower or outside face is flush with the bottom of the door. Two pairs of transverse lugs are also cast upon the inside face of the plate, such lugs being tapped to receive fixing screws, and so arranged that the screws from the reverse sides of the doors are not opposite each other, the ends being free to pass through and project from the inner ends of the lugs. Shaped face plates are provided for placing against the exterior faces of the door upon each side of the cut-away portion; such plates being pierced and countersunk to receive the screws which enter the aforementioned lugs, in addition to which the plates are provided with countersunk holes arranged in a position opposite to the solid part of the door, for the purpose of enabling the whole attachment to be firmly secured to the door, a screw hole also being arranged in the heel flange for the same purpose.

20,862 of 1907.—MINIMAX CONSOLIDATED, LTD.: *Paint-sprayer.*

This relates to a paint or colour sprayer in which the colour receptacle and colour discharge nozzle are removable, and consists in the mounting of the paint receptacle and the nozzle upon the sprayer frame by means of a stud which can be locked in position by a conical pin or the like. It is not necessary to make any changes in the adjustment of the paint or colour valve when the paint or colour receptacle is removed or mounted in place, in view of the hand lever being formed as an elbow lever, so that the adjustable stops which are mounted on the valve rod of the paint delivery controlling valve and serving for the adjustment of said valve, can clear this lever when it is desired to exchange the paint or colour receptacle.

21,324 of 1907.—J. W. TAYLOR: *Domestic Fireplaces and Hearths.*

This relates to a fireplace or hearth having a loose fireclay bottom upon which the fire is made, with a sloping concave or plane horizontal surface, such surface being level with the hearth, or practically so, or placed below the level of the hearth and used without firegrate or fire bars, in combination with a metallic frame disposed on the hearth in front of the fire opening between the fireclay bottom and the adjacent hearth tiles, and carrying a loose plate which acts as an expansion plate.

23,242 of 1907.—F. W. RUPPMAN: *Locks for Lifts or Elevators, and for the doors thereof.*

This relates to an elevator lock, characterised by a gravity-operated door-locking member arranged to engage a door, and a pivoted member for formally preventing disengagement of said door-locking member; said pivoted member being provided with means adapted to be engaged by a controller member whereby said pivoted member may be moved, and the pivoted member being mounted to swing horizontally. A spring normally holds the pivoted member in engagement with the door-locking member. The pivoted member is of angular form, one arm thereof engaging the locking member, and the other arm projecting forward to be engaged by a controller member. An over-balanced controller locking-member is pivotally mounted adjacent said door-locking member. A slidable plunger is operated by the controller to engage said

PATENTS.—*Continued on page 25.*

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xviii.; Auction Sales, xxviii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements: and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.**

Competitions.

JULY 11.—**Hazel Grove.**—SCHOOL.—Cheshire Local Education Authority are prepared to receive the names of architects willing to enter into a competition for a new school at Hazel Grove to accommodate 800 in three departments, with separate block for manual instruction, cookery, laundry, etc. Each architect must send particulars of his qualifications and references to school buildings erected under his superintendence. The remuneration will be in accordance with the county scale, and no premiums will be paid. Applications must be received by Mr. J. W. Bain, Clerk, School Brow, Bredbury, near Stockport.

AUGUST 7. — **Cleckheaton.** — COMPETITION FOR SECONDARY AND TECHNICAL SCHOOL BUILDINGS.—The U.D.C. invite competitive plans and designs for the erection of a new Secondary and Technical School for 150 pupils, in Cleckheaton. Plan, together with printed particulars, etc., may be obtained upon application at office of Mr. John H. Linfield, Clerk to the Council, Town Hall, Cleckheaton, upon deposit of the sum of 1*l.* 1s. First, second, and third prizes of 50*l.*, 30*l.*, and 20*l.* respectively are offered.

* NO DATE. — **Cheshire.** — SCHOOL. — The Ashton-under-Lyne and Stockport Unions' District Sub-committee of the Cheshire Education Authority invite architects willing to submit designs for a new school to send in their names. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

JULY 6-JULY 20. — **Birmingham.** — DEPOT.—The Tramways Committee invite tenders for the erection of a tramway depôt in Miller-street. Applications for forms of tender, etc., may be made at the office of the architects, Messrs. Ingall & Son, 3, Temple-row West, Birmingham. Before obtaining the bills of quantities it will be necessary to deposit a sum of 3*l.* 3s.

JULY 6.—**Carnetown.**—SCHOOL.—Mountain Ash Education Committee invite tenders for the erection of a mixed school, with offices and boundary walls, at Carnetown, Abercynon, to accommodate 360 children. Plans, etc., may be seen, and forms of tenders, etc., obtained, on application to the architect, Mr. W. H. Williams, Town Hall, Mountain Ash, upon the deposit of 2*l.* 2s.

JULY 6.—**Drighlington.**—WORKS AT SCHOOLS.—West Riding C.C. invite tenders for the execution of certain alterations, Drighlington Central Provided School, near Bradford, and Gildersome-street-lane Provided School, near Leeds. Specifications, etc., to be had on application (by post) to Mr. William Wood Divisional Clerk, Station-road, Batley.

JULY 6.—**Hull.**—ALTERATIONS.—Alterations to shop and premises, 25, Prospect-street, for Mr. H. Goltman. Plans, etc., to be seen at offices of Mr. B. S. Jacobs, F.R.I.B.A., Lincoln's Inn-buildings, Bowl-alley-lane, Hull.

JULY 6.—**Welshpool.**—CARPENTERS' WORK.—Tenders are invited for carpenters' work and painting at 1, Hall-street. Specifications, etc., can be obtained from the Borough Surveyor.

JULY 6-16.—**Wigton.**—POLICE-STATION, ETC.—The C.C. of Cumberland invite tenders for the various works in connexion with the erection, etc., of:—(1) Police-station and Court-house at Wigton; (2) new stable and small alterations at Penrith Police-station. Names to Mr. Geo. Dale Oliver, F.R.I.B.A., County Architect, Carlisle. Forms of tender can be had on application.

JULY 7.—**Belfast.**—WORKSHOPS.—Rebuilding the portion of the workshops for the industrious blind—recently destroyed by fire—Royal-avenue, Belfast. Plans, etc., may be had at office of Mr. Henry Seaver, architect, 16, Donegall-square South, Belfast. Quantities have been prepared, and may be had on application to Mr. S. C. Hunter, building surveyor.

JULY 7.—**Southend-on-Sea.**—ALTERATIONS, ETC., TO SCHOOL.—The Education Committee invite tenders for alterations and additions to the Brewery-road Girls' School. Plans, etc., can be obtained from Mr. E. J. Elford, C.E., Borough Engineer, upon deposit of 1*l.* 1s.

JULY 8. — **Dublin.** — SCHOOLS. — New National Schools, Lower Rutland-street, in the Marlborough-street Parish, for the Very Rev. Father Flavin, Adm., according to the plans, etc., prepared by Messrs. Ashlin & Coleman, architects, 7, Dawson-street, Dublin. Bills of quantities have been prepared by Messrs. Mumby & O'Rourke, surveyors, 15, College-green, Dublin, and can be obtained from them.

JULY 8.—**Dufftown.**—HOSPITAL ADDITIONS.—Mason, carpenter, plumber, slater, plaster, and painter works of new operating room and additions to Stephen Cottage Hospital, Dufftown. The plans, etc., may be seen with Mr. John Wittet, architect, Elgin.

JULY 8.—**Edinburgh.**—WALLS, ETC.—Edinburgh Magistrates and Council invite tenders for the demolition of old properties, 289-295, Cowgate, erection of boundary walls and fences, and laying pavements. Plan, etc., prepared by the Burgh Engineer, from whom schedules of quantities and all particulars may be obtained.

JULY 8.—**Ferndale.**—ALTERATIONS, ETC.—Alterations and additions to the present buildings of the Blaenllechau Working Men's Radical Club and Institute, Ferndale, for the Trustees and Committee. Plans etc., can be seen at Pontypridd office of Messrs. W. M. Lewis & Morgan, architects, Pontypridd and Tonypandy, and at the club premises at Blaenllechau.

JULY 8. — **Glamorganshire.** — SCHOOLS, ETC. — Glamorgan C.C. invite tenders for the following works, viz.:—(1) New school at Brynamman (Banwen); (2) alterations to the Council school at Birchgrove, Llansamlet; (3) alterations to the Council school at Cadle, near Swansea; (4) boundary wall, offices, etc., at the Tonmawr School site, near Neath; (5) boundary wall, offices, etc., at the Kimla School site, near Neath; (6) painting and cleaning work at schools. Plans, etc., may be seen, and bills of quantities, etc., obtained, for Work No. 1 at the Ystalyfera Police-station; for Work No. 2, at Skewen Police-station; and for Work No. 3, at the office of Mr. I. Jones Lewis, solicitor, 7, Rutland-street, Swansea. Plans may be seen, and copies of the specification, etc., obtained, for Works 4 and 5 at the Neath County Police-station. The plans, etc., of all the works may be seen or obtained at offices of Mr. T. Mansel Franklen, Clerk of the C.C., Glamorgan C.C. Offices, Westgate-street, Cardiff.

JULY 8-JULY 27.—**Horncastle.**—SCHOOL.—The erection of a grammar school at Horncastle, in the county of Lincoln. Bills of quantities and form of tender may be had on application to Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln, and on payment to them of 2*l.* 2s.

JULY 8. — **Pudsey.** — PREMISES.—Cloth premises, etc., South Park Mills, Pudsey. Plans, etc. may be seen, and quantities obtained at office of Mr. Sam Spencer, architect, etc., Old Bank-chambers, Great Horton, Bradford.

JULY 9. — **Abertillery.** — PRESBYTERY.—Erecting a Presbytery at Abertillery for the Rev. Father O'Donoghue. Plans, etc., can be seen at the office of the architect, Mr. C. Telford Evans, 8, Queen-street, Cardiff.

JULY 9. — **Gascoigne Wood.** — OFFICES.—North-Eastern Railway Directors invite tenders for the erection of offices, etc., at Gascoigne Wood. Plans, etc., may be seen, and quantities, etc., obtained, upon application to Mr. William Bell, the Company's Architect at York. Quantities supplied on personal application to parties tendering for the whole of the works.

JULY 11.—**Acrise and Paddlesworth.**—SCHOOL ENLARGEMENT.—Kent Education Committee invite tenders for an enlargement to Acrise and Paddlesworth Council School, near Folkestone, Kent. Plans, etc., prepared by the Committee's Architect (Mr. Wilfrid H. Robinson, M.S.A.), may be inspected upon application to the School Correspondent, Mr. A. E. Watts, 51, Guildhall-street, Folkestone, Kent, or at the offices of the Committee.

JULY 11. — **Laggan.** — CHURCH MANSE. — Tenders wanted for mason, carpenter and joiner, plumber, slater, plaster, and painter work of United Free Church Manse, proposed to be erected at Laggan. Plans, etc., to be seen with, and schedules of quantities obtained from, Mr. Alexander Cattanach, architect, Kingussie.

JULY 13.—**Aberdare.**—VILLAS.—Building two semi-detached villas at Abernant-road, Aberdare for Messrs. Jones & Williams. Plans, etc., may be seen at office of Mr. T. Roderick, architect, Clifton-street, Aberdare.

* JULY 13.—**Exeter.**—CHIMNEY.—Messrs. J. Hancock & Son invite tenders for taking down old chimney and building a new one at their works, Clifton hill, Exeter. See advertisement in this issue for further particulars.

JULY 13.—**Merthyr Tydfil.**—HOUSES.—Erection of twenty-two houses at Penydarren, Merthyr Tydfil, for Messrs. the Gellifaelog Building Club, Dowlais. Plans, etc., may be seen at the office of Mr. William Dowdeswell, architect and surveyor, Treharris.

JULY 14.—**Elgin.**—VILLA.—The mason, carpenter, slater, plumber, plasterer, painter and glazier works of villa to be built in Elgin. Plans, etc., may be seen with Mr Charles C. Doig, architect, Elgin.

JULY 14.—**High Clarence and Stargate and Cornforth.**—SCHOOL WORKS.—The C.C. of Durham invite tenders for new Council school at High Clarence, and alterations at Stargate and Cornforth Ferryhill Council Schools. Plans, etc., may be seen, and bills of quantities obtained, as follows:—(1) For school at High Clarence (for about 280 children), at the office of Mr. J. Garry, architect, 47, Church-street, West Hartlepool; (2) for alterations to Stargate and Cornforth Ferryhill Council Schools, at the office of Mr. F. E. Coates, Shire Hall, Durham.

JULY 15.—**Castleton.**—FARM BUILDINGS.—Farm buildings and bailiff's house at Llwynarthan, Castleton, near Cardiff, for Mr. Henry Webb, J.P. The plans, etc., can be seen at office of Mr. E. M. Bruce Vaughan, F.R.I.B.A., architect, Cardiff, and bills of quantities obtained on payment of a fee of 3*l.* 3s.

JULY 15.—**Crumpsall.**—WORKHOUSE ADDITIONS.—The Guardians of the Poor of the Township of Manchester invite tenders for the erection of a block for the accommodation of imbeciles, and for other additions at their Workhouse, at Crumpsall, near Manchester. Plans may be seen at the office of Mr. A. J. Murgatroyd, architect, 23, Strutt-street, Manchester, from whom quantities may be obtained upon payment of a deposit of 1*l.* 1s.

JULY 15.—**Cymmer, Porth.**—HOUSES.—Two semi-detached houses at Cymmer, Porth, for Miss A. Jones. Plans, etc., may be seen at the offices of the architect, Mr. James T. Jenkins, architect and surveyor, Porth.

JULY 15.—**Dorset.**—REPAIRS.—Dorset C.C. Education Committee invite tenders for certain repairs at Council schools. Specifications, etc., may be seen, and forms of tender obtained, at the various schools, i.e., Bothenhampton, Caundle Stourton, Fifehead Magdalen, Kinson, Lytchett Matravers, Morden, Portland Easton, Stower Provost, Stratton, Sturminster Marshall, Swyre, Wareham, Yetminster. Mr. B. R. Swift, Secretary.

JULY 15.—**Leeds.**—REPAIRING, ETC.—Repairing and pointing the viaducts, retaining walls, and bridges over the River Aire and the Leeds and Liverpool Canal, at Canal-road, Leeds. The drawings, etc., may be seen at the City Engineer's Office. Bills of quantities obtained on payment of 1*l.* 1s.

JULY 15.—**Porthcawl.**—BUILDINGS.—Building a new women's block to accommodate twenty-six patients and a new men's block to accommodate twenty patients at the "Rest," Porthcawl. The plans, etc., can be seen, and bills of quantities obtained (on payment of a fee of 3*l.* 3s.), at the office of the architect, Mr. Bruce Vaughan, F.R.I.B.A., 21, Dumfries-place, Cardiff.

JULY 15.—**Saltney.**—SCHOOL.—Chester and Flintshire Education Committees invite tenders for erecting a new Council school near Boundary-lane, in the Parish of Saltney. Plans, etc., can be seen during ordinary office hours at the offices of the County Architect, Education Offices, King-street, Mold, from whom also bills of quantities can be obtained on payment of a sum of 2*l.* 2s.

JULY 15. — **Stoke Newington.** — DISINFECTING STATION, ETC.—Stoke Newington B.C. invite tenders for the erection of a disinfecting station, messroom and stores, and alterations to two houses to be fitted with slipper baths. Particulars, etc., can be obtained of Mr. William F. Loveday, Borough Surveyor, Town Hall, Milton-road, Stoke Newington, N.

JULY 15. — **Uppingham.** — ALTERATIONS, ETC., TO BATHS.—Alterations and repairs to the Uppingham School Swimming Baths. Drawings, etc., may be seen, and forms and quantities (price 1*l.* 1s.) obtained, from Mr. Fred. H. Bancroft, A.M.Inst.C.E., F.S.I., civil engineer, 88, Mosley-street, Manchester.

JULY 16. — **Boyle.** — POST-OFFICE.—The Board of Public Works, Ireland, invite tenders for the erection and completion of a new Crown Post-office at Boyle, Co. Roscommon. The plans, etc., can be seen at the Post-office, Boyle, and at office of Mr. H. Williams, Secretary, office of Public Works, Dublin. Forms of tender, etc., will be supplied on deposit of 1*l.*

JULY 16.—**Dungannon.**—COTTAGES.—Dungannon R.D.C. invite tenders for building twenty-six labourers' cottages and for fencing twenty-six plots. Plans, etc., can be obtained from the Clerk to the R.D.C. on payment of 5s.

JULY 16. — **Hastings.** — NURSES' HOME. — The Guardians of the Hastings Union invite tenders for the erection of a nurses' home at the Hastings Workhouse Infirmary. Drawings, etc., by Messrs. A. W. Jeffery & Son, architects, 5, Havelock-road, Hastings, may be inspected, and the bills of quantities, etc., obtained, at their office upon the payment of a deposit of 2*l.* 2s.

JULY 18.—**King's Lynn.**—SANITARY OFFICES, ETC.—King's Lynn Elementary Education Committee invite tenders for the erection of sanitary offices, etc. (Technical Institute); painting and colouring (Highgate School). For specifications and other information apply to the Secretary, Education Office, King's Lynn.

* JULY 21. — **Streatham.** — UNDERGROUND CONVENIENCE.—The Wandsworth B.C. invite tenders for the construction of an underground convenience at Christchurch-road, Streatham. See advertisement in this issue for further particulars.

* JULY 22.—**Ringwood.**—SCHOOL.—Tenders are in-

vited for the erection of a new school at Ringwood. See advertisement in this issue for further particulars.

JULY 30.—**Gloucester.**—MISSION HALL.—The Building Committee of the Bristol-road Wesleyan Mission Hall invite tenders for the erection of a mission hall and Sunday school in Seymour-road, Gloucester. Plans, etc., may be seen during office hours on application to Mr. J. Fletcher Trew, M.S.A., architect, County-chambers, Station-road, Gloucester, from whom quantities may be obtained on deposit of 1*l.* 1s.

✱ AUGUST 10.—**Wells.**—LAUNDRY BUILDINGS, ETC.—The Sub-committee of the Somerset and Bath Asylum invite tenders for new laundry buildings and alteration to boiler-house at the Wells Asylum. See advertisement in this issue for further particulars.

NO DATE.—**Aglionby.**—HOUSE.—Proposed house, Aglionby, for Mr. John Maxwell. Names forthwith to the office of the architect, Mr. H. Higginson, 3, Lonsdale-street, Carlisle.

NO DATE. — **Frizinghall.** — HOUSES.—Two semi-detached houses at Frizinghall. Particulars on application to Mr. Ellis Marten, architect, 225, Swan-arcade, Bradford; and Harrogate.

NO DATE.—**Harrowbarrow.**—CHIMNEY.—Taking off and rebuilding about 25 ft. of a 100 ft. chimney, and pointing and cement-washing the whole when completed. For particulars apply to the Manager, Coombe Works, Harrowbarrow, St. Dominick, R.S.O.

NO DATE. — **Leeds.** — SUNDAY SCHOOL.—The Vicar and Churchwardens of St. James' Church, Leeds, invite tenders for the erection of new Sunday schools in Cross York-street. Applications for quantities should be made immediately to Mr. Sydney D. Kitson, architect, Greek St. Chambers.

NO DATE.—**Moneymore.**—RESIDENCE.—The erection of a curate's residence at the Loup, Moneymore, Co. Derry, for the Rev. Eugene M'Aleavey, P.P. Plans, etc., may be seen at the Parochial House, Loup, or at offices of Mr. J. V. Brennan, C.E., architect, Belfast Bank-chambers, Belfast.

✱ NO DATE.—**Southmead.**—BUILDINGS.—The Committee of the School of Industry for the Blind invite tenders for the erection of proposed buildings at Southmead, near Bristol. See advertisement in this issue for further particulars.

✱ NO DATE.—**Surrey.**—PARISH ROOM.—Tenders are invited for the erection of a Parish Room for St. Andrew's, Coulsdon, Surrey. See advertisement in this issue for further particulars.

ENGINEERING, IRON, AND STEEL.

JULY 6.—**Hornchurch.**—WHARF.—The Corporation of London invite tenders for the erection of wharf at Hornchurch. (Date extended from June 30 to July 6.)

JULY 6. — **Pendleton.** — HEATING, ETC. — Salford Education Committee invite tenders for the heating and ventilating of the Halton Bank Council School, Pendleton. Plans, etc., may be obtained at the office of the architect, Mr. John H. Woodhouse, F.R.I.B.A., 100, King-street, Manchester, on payment of a deposit of 1*l.* 1s.

JULY 7. — **Edinburgh.** — STEEL ROOFING. — Steel roofing and shedding at Electric Power Station, M'Donald-road. Plans, etc., may be seen at the Public Works Office, City Chambers, where also schedules of quantities may be obtained on personal application.

JULY 8.—**Kendal.**—WIDENING BRIDGE.—The widening of Nether Bridge, Kendal. Plans, etc., at office of Mr. Joseph Bintley, Architect and County Surveyor, 7, Lowther-street, Kendal.

JULY 8.—**Nottingham.**—BOILERS.—Nottingham Education Committee invite tenders for new boilers or other heating engineer's work:—Contract No. 1, Dunkirk and Lenton Council Schools; contract No. 2, Clarendon-street Council Schools; contract No. 3, Old Basford (Percy-street) and Southwark Council Schools; contract No. 4, New Basford (Radford-road) Council Schools. Plans may be seen, and copies of the specifications, etc., obtained, from the City Architect, Mr. Frank B. Lewis, Guildhall, on payment of a deposit of 1*l.* 1s. for each contract.

JULY 8: — **Salford.** — WEIGHBRIDGE. — Salford Gas Committee invite tenders for the supply and erection of a 20-ton motor lurry weighbridge at their Bloom-street Works. Full particulars may be obtained on application to Mr. William W. Woodward, Engineer, Gas Offices, Bloom-street, Salford.

JULY 10.—**Darlington.**—GIRDERS.—North-Eastern Railway Directors invite tenders for the construction and supply of twenty-four steel-plate girders, with cross girders, etc., necessary for the strengthening of two viaducts on the Saltburn and Whitby branch. Plans, etc., may be seen, and detailed quantities, etc., obtained, on personal application at the office of Mr. W. J. Cudworth, the Company's Engineer, at York.

JULY 10.—**Hull.**—FOOTBRIDGE.—North-Eastern Railway Directors invite tenders for the construction of a footbridge at Wincolmlee Level Crossing, Hull. Plans, etc., may be seen, and detailed quantities, etc., obtained, on personal application at the office of Mr. W. J. Cudworth, the Company's Engineer, at York.

JULY 10.—**Neath.**—HEATING.—The Committee invite tenders for the heating of St. Thomas's Parish Church, Neath, by the hot-water system. Mr. J. E. Evans, 39, Alfred-street, Neath.

JULY 13.—**Dublin.**—PLANT.—The Lighting Committee of the Corporation of Dublin are prepared to receive tenders for the supply and erection of boiler plant, etc., at their Pigeon House Generating Station. Specification, etc., can be obtained from the City Electrical Engineer, Fleet-street, Dublin, on payment of 1*l.* 1s. for each specification.

JULY 14.—**Burnley.**—PLANT, ETC.—Burnley R.D.C. invite tenders for the supply of (*a*) 13-B.H.P. gas-engine and plant, regulating wind-engine and pump; (*b*) about 2,490 lin. yds. of 6-in. turned and bored cast-iron pipes. Mr. J. S. Horn, Clerk to the Council, 18, Nicholas-street, Burnley.

JULY 16.—**Islington.**—COOLING TOWER.—Islington Lighting Committee invite tenders for the supply, delivery, and erection, complete, of a natural draught cooling tower. Specification may be obtained upon application to the Chief Engineer, Electricity Works, Eden-grove, Holloway, N.

JULY 16.—**Roydon.**—BRIDGE.—For constructing a bridge across the Waveney, between Roydon and Wortham. Plans, may be seen, and specifications obtained, at office of Mr. A. E. Scarlett, Clerk, Depwade R.D.C., Long Stratton, or at the office of the Clerk to the Hartismere R.D.C. at Eye.

JULY 17.—**Gillingham.**—ELECTRIC LIGHT.—Gillingham Education Committee invite tenders for carrying out the installation of electric light at Byron-road, Barnsole-road, and Richmond-road Council Schools, Gillingham, in accordance with specification, etc., to be obtained from Mr. Andrew Johns, Secretary, 4, Gardiner-street, Gillingham, Kent, upon payment of the sum of 10s. 6d.

✱ JULY 21. — **Worthing.** — ALTERATIONS, ETC., TO LAUNDRY MACHINERY. — The Metropolitan Asylums Board invite tenders for alterations and additions to laundry machinery, etc. See advertisement in this issue for further particulars.

JULY 23.—**Woolwich.**—PLANT.—Woolwich B.C. invite tenders for the equipment of their Globe-lane Generating Station with coal-handling plant. Specification, etc., on application at the office of the Borough Electrical Engineer, Town Hall, Woolwich.

JULY 29.—**Johannesburg.**—HYDRAULIC TYRING MACHINE.—Tenders are invited for the supply of an hydraulic tyring machine. Forms of tender, etc., may be obtained on application to the Council's agents in London, Messrs. E. W. Carling & Co., St. Dunstan's-buildings, St. Dunstan's Hill, on payment of 10s.

NO DATE.—**Sutton Bonnington.**—WELL.—Sinking and lining well, 30 ft. deep, 5 ft. 6 in. external diameter, at New Schools, Sutton Bonnington. Apply Messrs. William Crane Ltd., contractors, Nottingham.

MISCELLANEOUS.

JULY 7.—**Birkenhead.**—HAWSERS.—The Corporation of Birkenhead invite tenders for the supply of Manilla hawsers. Particulars, etc., may be obtained at the Manager's Office, Woodside Ferry.

JULY 7.—**Rathdown.**—IRON FENCING.—Rathdown No. 2 R.D.C. invite tenders for the supply and erection of iron fencing and iron gates to inclose sites for twenty-seven labourers' cottages. Specification prepared by Mr. R. M. Butler, M.Inst.C.E., 12, Dawson-street, Dublin, Architect to the Council, can be seen at his office or at the Clerk's Office, Rathdown Union.

JULY 9.—**Blaydon.**—SCAVENGING.—Blaydon U.D.C. invite tenders for the removal and disposal of scuttle ashes, contents of ashpits, house refuse, etc., at Blaydon, Winlaton, and Winlaton Mill. Specifications, etc., may be obtained from Mr. Robert Biggins, Sanitary Inspector, at the Offices of the Council, Blaydon.

JULY 9.—**Edinburgh.**—FENCING, ETC.—Edinburgh Corporation invite estimates for:—(1) Supplying and fitting up gymnastic apparatus, and (2) erection of fencing at children's playground, Lochend Meadows. Plans, etc., may be seen at the Public Works Office, City-chambers, where also schedules of quantities may be obtained on personal application.

✱ JULY 16.—**Rotherhithe.**—DEMOLITION, ETC., OF IRON BUILDING.—The Bermondsey Guardians invite tenders for the demolition, removal, and purchase of corrugated iron and wood building. See advertisement in this issue for further particulars.

PAINTING, etc.

JULY 6.—**Smethwick.**—RENOVATION.—Smethwick Corporation invite tenders for the repairs, renovating, painting, etc., of the chapels and shelter at the Uplands Cemetery. Specification can be seen, and all particulars obtained, at the office of Mr. C. J. Fox Allin, Borough Surveyor, Council House, Smethwick.

JULY 6.—**West Didsbury.**—PAINTING.—Manchester Corporation (Withington Committee) invite tenders for external painting of the Town Hall, West Didsbury, and buildings at the several depôts. Particulars, etc., may be obtained from the Surveyor, Town Hall, West Didsbury.

JULY 7.—**Hove.**—PAINTING, ETC.—Hove Borough Education Committee invite tenders for the external painting, etc., and other works at Connaught-road and East Hove schools. Specification may be seen at the office of the Borough Surveyor, Mr. H. H. Scott, Town Hall, Hove, where also forms of tender may be obtained.

JULY 7.—**Nottingham.**—DECORATING, ETC.—Tenders are invited for cleaning and decorating the interior of the Poor Law Offices, Shakespeare-street, Nottingham. Form of tender, etc., may be obtained at the Poor Law Offices, Shakespeare-street, Nottingham.

JULY 8.—**Nottingham.**—CLEANING, ETC.—Nottingham Education Committee invite tenders for cleaning and painting schools. Copies of the bill of quantities and forms of tender may be obtained from Mr. Frank B. Lewis, City Architect, Guildhall, on payment of a deposit of 1*l.* 1s. for each school.

JULY 8.—**Nottingham.**—PLUMBING, ETC.—Nottingham Education Committee invite tenders for new sanitary fittings and plumbing work:—Contract No. 1, Bosworth-road Council School—water-closet fittings and lavatory basins; contract No. 2, Ilkeston-road Council School—water-closet fittings; contract No. 3, Alfreton-road, Old Basford, New Basford, and Huntingdon-street Council Schools—lavatory basins. Plans may be seen, and copies of the bills of quantities, etc., obtained, from Mr. Frank B. Lewis, City Architect, Guildhall, on payment of a deposit of 1*l.* 1s. for each contract.

✱ JULY 8.—**Sutton.**—PAINTING, CLEANING, ETC.—The Metropolitan Asylums Board invite tenders for painting, cleaning, and tar-paving at the Downs School, Sutton, Surrey. See advertisement in this issue for further particulars.

JULY 8.—**Widnes.**—PAINTING.—Painting the interior of the Municipal Day Secondary School and caretaker's apartments. Specifications, etc., may be obtained upon application to Mr. J. S. Sinclair, A.M.Inst.C.E., Borough Surveyor, Town Hall, Widnes.

✱ JULY 9.—**Rotherhithe.**—CLEANING, PAINTING, ETC.—The Bermondsey Guardians invite tenders for cleaning, painting, distempering, and whitewashing at the Infirmary, Rotherhithe. See advertisement in this issue for further particulars.

JULY 9.—**Sheffield.**—PAINTING.—The Guardians of the Poor of the Sheffield Union invite tenders for painters' and whitewashers' work required at the Union Hospital, Fir-vale. Specifications, etc., may be seen, and further particulars obtained, on application at the Workhouse.

JULY 11.—**Broomhill.**—PAINTING, ETC.—The Broomhill Equitable Industrial Co-operative Society, Ltd., invite estimates for external painting and repairs to their premises at Broomhill and Red-row. Specifications can be seen upon application at the Society's Offices at Broomhill.

JULY 11.—**Lyng.**—PAINTING.—Internal painting and colouring of Lyng National School. Apply to Rev. G. L. Gosling, Lyng Rectory, Norwich.

JULY 11. — **Newport (Mon.).** — PAINTING.—Monmouthshire Education Committee invite tenders for painting and colouring Council schools. Specifications may be seen at office of Mr. C. Dauncey, Secretary, C.C. Offices, Newport, Mon.

JULY 13. — **Halifax.** — LIMEWASHING, ETC. — The Markets Committee of the Halifax Corporation invite tenders for limewashing the slaughter-houses, etc. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax.

JULY 14.—**Swansea.**—PAINTING.—Swansea R.D.C. invite tenders for painting all the outside wood and iron work of the wards of the Isolation Hospital, Garngoch, together with the Administrative Block, and other buildings. Further particulars can be obtained from Mr. Edward Harris, Clerk, District Council Offices, Alexandra-road, Swansea, or from Mr. T. Trevor Williams, Engineer and Surveyor, Council Offices, Alexandra-road, Swansea.

✱ JULY 14.—**Victoria Park.**—PAINTING.—The Bethnal Green Guardians invite tenders for painting the exterior of the Administrative Offices. See advertisement in this issue for further particulars.

JULY 20.—**Dorchester.**—PAINTING, ETC.—Carrying out certain painting, limewashing, and repairing at the Dorchester Church of England Schools. Particulars, etc., may be obtained at the office of Mr. Henry O. Lock, Secretary to Managers, 24, High West-street, Dorchester.

JULY 20.—**Gateshead.**—PAINTING.—The Gateshead Education Committee invite tenders for painting and cleaning various schools during the mid-summer vacation (August). Specifications, etc., will be forwarded to such persons who send in their names and addresses to the Secretary, Education Offices.

JULY 24.—**Flintshire.**—PAINTING.—Flintshire Education Committee invite tenders for the painting and colouring of a number of the Elementary schools in the county. Mr. Samuel Evans, County Surveyor, Mold, from whom copies of specifications, etc., can be obtained on application.

NO DATE.—**Bosmere.**—PAINTING.—The R.D.C. of Bosmere and Claydon invite tenders for the painting of guide posts, posts and rails, and boundary posts within the district. Particulars, etc., may be had on application to the Surveyor of Highways, Mr. George Fiske, The Red House, Coddenham.

NO DATE.—**Church Gresley.**—RENOVATING, ETC.—Tenders wanted for renovating and cleaning Queen-street Mission-room, Church Gresley. Applications to be made to Mr. J. Waring, 137, Oxford-street, Church Gresley.

ROADS, SANITARY, AND WATER WORKS.

JULY 3-6.—**Rishworth.**—SEWAGE-DISPOSAL WORKS.—Rishworth U.D.C. invite tenders for the construction of a septic tank, 24-ft. circular filter and storm outlets, sludge and effluent drains, etc., at Carver Clough, Rishworth. Plans, etc., may be seen, and bills of quantities obtained, at office of Messrs. Richard Horsfall & Son, surveyors, 22a, Commercial-street, Halifax.

JULY 6.—**Baildon.**—ASPHALTING.—West Riding C.C. Education Department invite tenders for asphalting the playgrounds of Tong Park Provided School, Baildon. Specifications can be had on application to Mr. Edward H. Steel, Penny Bank Chambers, Shipley.

JULY 6.—**Castleford.**—ASPHALTING.—West Riding C.C. Education Department invite tenders for asphalting about 170 yds. of the playground at Castleford, Wheldon-lane Provided School. Specifications may be obtained from Mr. B. Leah, Education Office, Castleford.

JULY 6.—**Withington.**—SEWER.—Manchester Corporation (Withington Committee) invite tenders for the laying of about 915 lin. yds. of earthenware pipe sewer, in Demesne-road, and the extension of Princess-road, Alexandra Park. Plans, etc., can be seen, and a form of tender, etc., obtained, from the Surveyor to the Commitee, Town Hall, West Didsbury, on payment of the sum of 1*l.* 1s.

JULY 7.—**Abbots Langley.**—DRAINAGE.—Watford R.D.C. invite tenders for the execution of certain small drainage works in connexion with ten cottages at Monks Island, Abbots Langley. Plan, etc., can be seen, and form of tender obtained, at the Council's Offices, 9, Market-street, Watford.

JULY 7.—**Swansea.**—CONDUIT.—The Corporation invite tenders for the construction of about 850 lin. yds. of stoneware pipe conduit with junctions, manholes, etc., at Uplands. Drawings, etc., may be seen at the office of the Borough Engineer, Guildhall, Swansea, from whom schedule of prices, etc., can be obtained on payment of 1*l.* 1s.

✱ JULY 7.—**Willesden.**—ROAD-MAKING, PAVING, ETC.—The Willesden D.C. invite tenders for road-making, paving, etc. See advertisement in this issue for further particulars.

JULY 7.—**Winchester.**—SEWER.—Supplying and laying about 500 ft. of 9-in. stoneware pipe sewer, with sundry manholes and other works at "Greenhills," Winchester, Hants. Quantities, etc., can be obtained on payment of 2s. 6d. (not returnable) on application to Mr. William Burrough Hill, F.S.I., surveyor, Southampton.

JULY 8.—**Edinburgh.**—PAVING, ETC.—Edinburgh Corporation invite estimate for paving works.

Schedules, etc., may be obtained on application to the City Road Surveyor, City-chambers.

JULY 8.—**Torpoint.**—WATER SUPPLY WORKS.—The U.D.C. of Torpoint invite tenders for the construction of a line of 3-in. iron pipe and fittings from Sir Reginald Pole Carew's Reservoir at Borough to Torpoint, about 2,700 yds. Plans, etc., can be seen at the offices of the Surveyor to the Council, Mr. F. A. Clark, 83, Old Town-street, Plymouth, from whom bills of quantities, etc., can be obtained on deposit of the sum of 2*l.* 2*s.*

JULY 8.—**Tynemouth.**—STREET WORKS.—Tynemouth R.D.C. invite tenders for reconstruction of old streets and construction of new streets at Rosehill, Willington-on-Tyne. Plans, etc., may be seen at the office of the Surveyor, Mr. John Waters, Warden-place, Longbenton. Copies of specification, etc., may be obtained on personal application to the surveyor.

JULY 9.—**Rochdale.**—CONSTRUCTION OF ROAD, ETC.—The Guardians invite tenders for materials and workmanship required in paving and laying of edgings, channel, wheelstones, macadam, and drainage of road at the Union Workhouse, Dearnley. Plans may be seen, and particulars obtained, at the office of Mr. S. H. Shuttleworth, surveyor, Littleborough.

JULY 10.—**Hunslet.**—STREET WORKS.—Hunslet R.D.C. invite tenders for the making-up of Hollyshaw-street and back Hollyshaw-terrace at Whitkirk, near Leeds. Plan, etc., may be seen at office of Mr. W. B. Pindar, Clerk, Glasshouse-street, Hunslet, Leeds.

JULY 11.—**Harrow.**—STREET WORKS.—Harrow-on-the-Hill U.D.C. invite tenders for carrying out a public street improvement in Pinner-road. Plans may be seen, and specification, etc., obtained, from Mr. J. Percy Bennetts, Engineer and Surveyor to the Council, on deposit of a 5*l.* note.

JULY 13.—**London.**—SEWER.—Hornsey T.C. invite tenders for the construction of about 900 ft. run of 15-in. stoneware pipe storm-water sewer, and about 900 ft. run of 9-in. stoneware pipe foul-water sewer, with manholes, etc., at Eastern-road, Fortis Green. Forms of tender, etc., can be obtained from Mr. E. J. Lovegrove, Borough Engineer and Surveyor, Municipal Offices, 99, Southwood-lane, Highgate.

JULY 16.—**Bournemouth.**—MAKING-UP.—No. 1.—Ascham-road (second portion). No. 2.—New Park-road. No. 3.—Lowther-road (third portion). No. 4.—Burtley-road. Full particulars, etc., can be obtained of the Borough Engineer, Mr. F. W. Lacey, at whose office drawings can be seen, provided that the sum of 1*l.* 1*s.* has been previously deposited with the Borough Engineer and Surveyor, Municipal Offices, Bournemouth.

JULY 18.—**Palmer's Green.**—STREET IMPROVEMENTS.—Southgate U.D.C. invite tenders for the execution of certain works of public street improvement at Alderman's-hill, Palmer's Green. Plans may be seen on application to the Council's Surveyor, Mr. C. G. Lawson, from whom copies of the specification, etc., may be obtained on depositing 2*l.*

JULY 21.—**Portsmouth.**—SEWERS.—Portsmouth Corporation invite tenders for the construction of sewers, manholes, pumping station, attendant's cottage, and all accessories, in Copnor-road, together with Crossley's gas engines and centrifugal pumps. On payment of the sum of 5*l.* a lithographed copy of the specification, etc., can be obtained on application to Mr. Alexander Hellard, Town Clerk, Town Hall, Portsmouth, and any further particulars can be obtained at the Borough Engineer's Offices at the Town Hall, Portsmouth.

JULY 27.—**Molesey.**—RESERVOIR.—The Metropolitan Water Board invite tenders for the construction of a storage reservoir near Molesey, together with a pipe line, 54 in. diameter, a girder bridge over the River Mole, and other works. The drawings, etc., may be inspected at the offices of the Chief Engineer, Savoy-court, Strand, W.C. Forms of tender, etc., from the Chief Engineer on the production of an official receipt for the sum of 50*l.*, which sum must be deposited with the accountant at Savoy-court, Strand, W.C.

STONE, MATERIALS, AND STORES.

JULY 6.—**Alnwick.**—ROAD METAL.—Alnwick U.D.C. invite tenders for the supply, at the usual roadside depôts, of 2-in. broken whinstone road metal. Specifications, etc., can be obtained on application at U.D.C. Offices, Green Batt.

JULY 7.—**London.**—STORES.—The South Indian Railway Company, Ltd., invite tenders for the supply of locomotive stores. Specification, etc., may be obtained at the Company's Offices, J. Shaw Stewart, Major-General, R.E., Managing Director, 91, York-street, Westminster, London, S.W. A charge which will not be returned, will be made of 10*s.* for each copy of the specification. Copies of the drawings may be obtained at the office of Sir G. B. Bruce and White, 3, Victoria-street, S.W., on payment of 5*s.* per sheet.

JULY 8.—**Gravesend.**—GRANITE SPALLS.—Gravesend and Milton Guardians require a cargo of Guernsey granite spalls, not exceeding 300 tons, to be delivered into the stoneyard, Arthur-street, Gravesend. Forms of tender to be had on application at office of Mr. Wm. Jno. King, Clerk to the Guardians.

JULY 11.—**Chorley.**—MATERIALS.—The Corporation of Chorley invite tenders for engineering bricks, cast-iron pipes, Lias lime, cement. Specifications, etc., can be obtained on application to the Borough Surveyor, Town Hall, Chorley.

JULY 11.—**Staines.**—GRANITE.—Staines U.D.C. invite tenders for the supply of broken granite. Forms of tender, etc., may be obtained on application to Mr. E. J. Barrett, A.M.Inst.C.E., Engineer and Surveyor, Town Hall, Staines.

* JULY 11.—**Weston-super-Mare.**—STORES, ETC.—The Weston-super-Mare U.D.C. invite tenders for the supply of certain stores, etc., for a period ending March 31, 1909. See advertisement in this issue for further particulars.

JULY 13.—**Sutton-in-Ashfield.**—TAR MACADAM.—The Sutton-in-Ashfield U.D.C. invite tenders for the supply of tar macadam. Specification, etc., to be obtained from Mr. Walter Burn, A.M.Inst.C.E., Surveyor.

JULY 14.—**London.**—STEEL MATERIAL.—Bombay, Baroda, and Central India Railway Directors invite tenders for the supply of:—(1) Steel material; (2) spring and ferrule steel; (3) laminated springs. Forms, etc., can be obtained at offices of Mr. W. V. Constable, Secretary, Gloucester House, 2, 3, and 4, Bishopsgate-street Without, London, E.C., on payment of 21*s.* each (which will not be returned).

JULY 14.—**Wellingborough.**—PIPES.—Wellingborough U.D.C. invite tenders for the supply and delivery of about 30 tons of cast-iron pipes. Application to Mr. E. Young Harrison, A.M.Inst.C.E., Surveyor and Water Engineer, Surveyor's Offices, Park-road, Wellingborough, when a specification, etc., will be furnished.

JULY 15.—**Leeds.**—STORES.—The Street Lighting Committee invite tenders for supply of copper lamps, lamp pillars, lamp furniture, pillar lamp irons and carriages, wall bracket irons, sheet copper and copper tops for lamps, glass for lamps. Further particulars, etc., may be obtained on application to the Superintendent of Street Lighting, Springwell-street Depôt.

JULY 17.—**London.**—PIPES, ETC.—The Receiver-General and Director of Contracts, Valletta, invites sealed tenders for the supply of stoneware pipes and specials. Tenders are to be accompanied with a deposit of 40*l.* to be made in the office of the Crown Agents by tenderers residing in Great Britain not having a representative in Malta. Particulars, specification, etc., may be obtained on application at office of Mr. Wm. Casolani, Receiver-General and Director of Contracts, or to the Crown Agents for the Colonies, Whitehall-gardens, London.

JULY 21.—**Nelson.**—GRANITE SETTS.—The Plans and Buildings Committee invite tenders for the supply and delivery of about 180 tons of specially-dressed granite setts. Particulars may be obtained, and sample sett seen, at the office of the Borough Surveyor.

JULY 21.—**Newcastle-upon-Tyne.**—DRESSED FREESTONE FOR QUAY EXTENSION WORKS.—Tenders are invited for the supply and delivery of about 16,300 cubic ft. of dressed freestone. Specification, etc., can be obtained, and drawings inspected, at the City Engineer's Office, Town Hall, Newcastle-upon-Tyne.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*CLERK OF WORKS	Essex Education Committee	3*l.* 3*s.* per week	July 8
*ASSIST. AND INSPR. IN DPT. OF AGRICL. AND TECH. EDUC.	Ministry of Education, Egypt	500*l.* per year	July 11
*SUPERINTENDT. OF HOUSE CONNEXS. (WTR. AND SEW.)	Rangoon Municipality	See advertisement in this issue	July 15
*CLERK OF WORKS	W. Sussex, etc., Jt. Ed. Com.	3*l.* per week	No date

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale
*FREEHOLD BUILDING PLOTS, HIGH BARNET—Red Lion Hotel, Barnet	Charles Sparrow & Son	July 6
*FREEHOLD BUILDING PLOTS, ACTON—On the Estate	C. Rawley Cross & Co.	July 8
*STOCK-IN TRADE, PLANT, AND MACHINERY—On the Premises	Harding & Son	July 9, 10, 13
*FREEHOLD HOUSE, WESTMINSTER—At the Mart	Green & Son	July 10
*GOODWILL, PLANT, ETC., OF THE GLOBE FOUNDRY—At the Mart	Horne & Co.	July 13
*CORNER BUILDING SITE, GUTTER-LANE—At the Mart	Debenham, Tewson, & Co.	July 14
*FREEHOLD BUILDING SITE, UXBRIDGE-ROAD—At the Mart	C. Rawley Cross & Co.	July 17
*FREEHOLD BUILDING ESTATE, HOUNSLOW—At the Mart	Trollope	July 22
*LEASE, MACHINERY, PLANT, AND STOCK, ETC., OF CANAL WHARF—On the Premises	Horne & Co.	do.
*FREEHOLD PORTLAND CEMENT WORKS, GRAYS—At the Mart	Fuller, Horsey, Sons, & Cassell	July 23
*COACH BUILDER'S PLANT, MACHINERY, ETC.—On the Premises	Fuller, Horsey, Sons, & Cassell	July 24
*FREEHOLD BUILDING LAND, HENDON—At the Mart	Leopold Farmer & Sons	July 29

PATENTS.—*Continued from page 22.*

pivoted member. The controller member is provided with an angular slot, an arm connected with the controller shaft having its free end in engagement with said slot. A shield is provided for protecting the pivoting member. Said pivoted retaining member is provided with a lip and two pivotally-connected sections pivotally mounted upon said lip, and has means for returning a controller-locking tumbler to its normal position. A pivoted block is adapted to be connected with the controller locking tumbler, and a pin is provided on said pivoted member for oscillating said block. The door is provided with an arm or extension having a pivoted detent adapted to automatically engage said locking member.

24,209 of 1907.—A. SCHOOL: *Method and Apparatus for Withdrawing the Air from Steam-heating Installations.*

This relates to a steam-heating installation working with pressure below atmosphere, wherein an automatically-controlled air-withdrawing device actuated by water pressure is arranged for drawing off the air from the heating installation, and for maintaining the steam pressure below the atmosphere.

27,163 of 1907.—H. C. DUCKWORTH: *Water-heating Stoves or Boilers.*

This relates to a water-jacketed stove or boiler of the type wherein a supply of fuel is contained in a conical shaft or feeder arranged above the combustion chamber that is in free communication with a rear chamber from the top of which the smoke flue extends, the combustion chamber and rear chamber being formed by and within a surrounding water-jacket or casing extending to the level of the ground, or nearly so; the arrangement being such that the stove or boiler after being lighted will continue to burn in a reliable manner many hours without the end of the smoke flue becoming choked, and in which the water-jacket and waterway bridge extend to the ground level; and consists in providing an uptake for the passage of air whereby the products of combustion are checked, damped, or baffled before their entrance to the flue; and damping means located at the bottom of the uptake, and the combination with the said stove or boiler of a cross waterway bridge arranged between the combustion chamber and the uptake.

27,623 of 1907.—L. GUAD: *Machine for Cutting Tiles.*

This relates to a tile-cutting machine for roofing tiles with a lug on the under side, in which the lug-cutting wire is arranged at a distance from the cross-cutting wire equal to the length of the lug, specialised by the lugs on the under side of the tiles being cut at the forward end; the lug-cutting wire is carried by a hoop which is vertically movable, and swivels around a horizontal spindle, said hoop being pressed downwards from the spindle of the cross-cutting wire by means of a connecting rod and a pawl contrary to the action of springs, whereby the lower end of the hoop enters into a switch by which it is so turned that the lug-cutting wire, after being forced

downwards out of the clay stream, is moved backward through a distance equal to the length of a lug before again entering the clay; and to a modification of the device for cutting the curved end of the tiles in which the cutting wire is capable of being adjusted for cutting off the curved edge of the tiles at various distances from its swivelling centre, the gear of said wire also being adjustable.

28,326 of 1907.—W. E. PEEPLES: *Locks.*

This relates to a lock, comprising the combination with a casing of a plurality of latches pivoted in the casing, a spring for holding the latches down, and a dead latch mounted in the casing upon a turn button, of a keeper member provided with a head latch mounted upon the turn button, and the turn buttons being provided with apertures for the passage of a seal.

28,749 of 1907.—W. V. BROWN: *Locks and Latches.*

This relates to a latch and lock having a cylindrical casing, and having a latch-bolt also of cylindrical contour, and fitting the casing, and movable longitudinally therein; characterised by having the roll back provided with lugs which engage in slots in the latch-bolt to cause a longitudinal movement of the latch-bolt, while the spring against which the latch-bolt is moved is held and guided in the latch-bolt by a separate block entering the spring and resting at one end against the roll back; and a lock member formed of a cylindrical body passing laterally through wings formed at the rear end of the latch-bolt, and engaging a spring having a lug arranged to be moved into or out of a perforation in the casing by a tongue projecting from the locking member, but only when the latch-bolt is in its projected position.

623 of 1908.—F. E. ASH: *Ventilators.*

This relates to ventilators having a control and indicator, consisting of a suitable case having a display aperture and suitable means for securing to a wall or the like. In this case between suitable guides is an indicating slide. This slide has a stop which prevents it coming out of the case, and also limits its movement into the case by meeting one of the guides; the slide further has a peg or stud which is engaged by a shaped opening of an operating arm connected with a spindle boss or key boss, so that on the insertion and partial rotation of a key the arm and indicating slide are operated. To lock the slide, means may be employed consisting of a pivoted pawl having a faced part mounted above it. The pawl is pressed by a spring to bring its tooth into engagement with one or other of the teeth of the slide. The shaped part of the pawl is kept in rubbing contact with the shaped end of the arm, so that the movement of the latter in operating the slide disengages the pawl tooth and allows the operation of the slide. The slide is connected by a rod or the like with the operating lever or operating means of the ventilator, so that the partial rotation of the key effecting the movement of the slide will open or close the ventilator.

2,731 of 1908.—D. SMITH: *Flush-pipe Connexions for Water-closets.*

This relates to a cone for connecting flush-pipes to water-closet basins, the first part of which consists of two metal plates made to the shape and fit of basin rim and of the flush-pipe, the part of cone fitting over flush-pipe having a screwed thread; a washer or sleeve is made to fit over the cone, and a threaded nut is worked on, which presses up the sleeve until it binds together the two sections of cone.

531 of 1908.—V. BALE: *Machines or Apparatus for the Manufacture of Artificial Stone or Slate.*

This relates to machines or apparatus for the manufacture of artificial stone or slate, wherein the slabs of material arriving at the delivery end of the conveyer in a moist and pliable condition are transferred on to thin metal sheets sufficiently thin to bend under the weight of the material deposited thereon. These metal sheets are fed beneath the moist slabs, and are moved forward therewith at the same speed, so as to avoid all risk of injury to the slab whilst the latter is being transferred to the said metal sheet. The moist material, being still in some degree plastic, can withstand a certain amount of bending without cracking the surfaces of the slab, so that the partly-dried slab can be conveniently transported on this metal sheet away from the apparatus in which it has undergone preliminary treatment to undergo the further necessary hardening process, the metal sheet acting as a reinforcing piece to prevent excessive bending of the slab whilst being carried from place to place. A further feature of the invention is the means provided for removing the slabs from the conveyer on which it has been carried whilst being subjected to the action of the pressing rollers, suction-boxes, and the like. The conveyer at its delivery end passes round a supporting drum of comparatively large diameter, and a roller of small diameter is arranged between the said drum and the conveyer in order to produce a sharp change in the direction in which the conveyer travels, whereby the said conveyer is pulled away from the slab and the latter is fed forward horizontally.

1,098 of 1908.—F. H. CRITTALL: *Manufacture of Expanded Metal and Apparatus therefor.*

This relates to the manufacture of expanded metal and apparatus therefor, which is commonly made by forming in a sheet parallel longitudinal rows of short slits, and then pulling the sides of the sheet apart, thus opening the slits into diamond-shape holes; and consists in the uncut portions of metal between the ends of the slits of each row, which form the junctions at the corners of the meshes of the resulting network, being more or less relieved from strain by causing the strips forming the sides of the meshes to twist helically, which result can be produced in the following manner:—The sheet of metal is slit in rows as usual, the rectangular junctions of uncut metal between the ends of the slits of each row being midway along the slits of the adjacent rows. The sheet is thus divided into narrow longitudinal strips connected by these rectangular junctions which lie in transverse rows about half the length of a slit apart. The junctions are then turned about longitudinal axes until they are approximately at right angles to the plane of the sheet, all the junctions of one transverse row being turned in the same direction, whilst all the junctions of the two adjacent transverse rows are turned in the opposite direction. The effect of this is to give a helical twist to the strips, and when the sheet is expanded in the ordinary way they retain this twist, and the junctions remain more or less at right angles to the plane of the sheet. In the finished article also, the whole length of each strip is on one side of the plane sheet, adjacent strips being at opposite sides of this plane. The bending of the junctions may conveniently be performed by means of rollers having saw-like teeth bevelled on one side. The manufacture is preferably carried out on the machine described in the specification No. 21,083 of 1905, the rolls with saw-like teeth being substituted for the corrugated rolls.

3,760 of 1908.—D. P. JONES: *Brackets for Attachment to Scaffold and other Poles or the like.*

This relates to brackets for attachment to scaffold and other poles or the like, and consists in constructing the bracket with a tooth at the lower end of its downwardly-extending arm adapted to enter the pole to which the bracket is to be fixed, in combination with lateral horizontally-extending arms located near or close up to the bend or angle at which the outwardly-extending portion or supporting member of the bracket commences, and providing a chain fixed at one end to one of said horizontal arms passing round the pole, and hooked on to a hook or spike on the other horizontal arm, and, in some cases, fitting the chain at intervals with toothed studs to act as an auxiliary to the grip of the chain upon the pole.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

June 12.—By FRANK LLOYD & SONS (at Whitchurch).

Whitchurch, Salop.—The Chinnell Field, 11 acres, f.	£900
Marbury, Chester.—The Lower Hall, 167 a. 3 r. 8 p., f.	8,000

June 16.—By WILKINSON, SON, & WELCH (at Brighton).

Brighton.—10, St. Georges'-pl., f., p.	950

June 18.—By SEXTON & GRIMWADE (at Clacton-on-Sea).

Great Clacton, Essex.—Whitehouse Farm, 41 acres, f., y.r. 62*l.*	2,100
Hawthorn Lodge, f., y.r. 16*l.*	160
Brook Farm, 70 a. 1 r. 5 p., f., y.r. 80*l.*	1,530

By ROOTES & WINTLE (at Ross).

Ross, Hereford.—15, High-st. (s.), f., p.	300
Bridstow, Hereford.—Gosbrook Farm, 36 acres, f., y.r. 70*l.*	1,360
Whitchurch.—The Hill Farm, 58 acres, f., y.r. 75*l.*	1,800

By WILTSHIRE & CO. (at Lewisham).

Lewisham.—71 to 89 (odd), Ennersdale-rd., f., w.r. 310*l.* 14s.	3,035
55, Pascoe-rd., f., e.r. 60*l.*	650
273, Hither Green-la., u.t. 72 yrs., g.r. 6*l.* 10s., y.r. 28*l.*	195

June 19.—By EDWIN FEAR & WALKER (at Andover).

Binley, Hants.—Mayfield Holding, 25 acres, f., y.r. 54*l.*	1,025

June 20.—By ERNEST S. BEARD & DANIELL (at Colchester).

Lexden, Essex.—Two accommodation fields, 18 acres, f.	£260
Frating, Essex.—Manning's Farm 97¼ acres, f.	1,795
Ardleigh, Essex.—Carrington's Farm, 45 acres, f.	983
Dedham, Essex.—Great Hickle Farm, etc., 136¼ acres, f.	3,085
Langham Suffolk.—Accommodation fields, 17 acres, f.	380
Stratford St. Mary, Suffolk.—Two freehold meadows, 12 acres, f.	340
East Bergholt, Suffolk.—Three riverside meadows, 32¼ acres, f.	900

By PAXTON & HOLIDAY (at Oxford).

Noke, Oxford.—A portion of the Noke Estate, 129a. 1r. 7p., f.	3,054
Islip, Oxford.—Pasture land 40a. 0r. 17p., f.	760

June 22.—By FURBER.

St. Pancras.—2, Hunter-st., u.t. 8 yrs., g.r. 45*l.*, y.r. 95*l.*	110

By HERRING, SON, & DAW.

Clapham.—King's-av., Tankerton and Stabling, f., p.	2,000
Battersea.—148, Grant-rd., u.t. 57 yrs., g.r. 6*l.*, w.r. 31*l.* 4s.	150
Brixton.—117 to 125 (odd). Tulse-hill, u.t. 59 yrs., g.r. 68*l.*, e.r. 520*l.*	1,245

By PERCIVAL HODSON.

Wood Green.—45, Truro-rd., u.t. 68 yrs., g.r. 7*l.* 7s., e.r. 35*l.*	220
New Southgate.—28, The Limes-av., f., e.r. 45*l.*	550

By KEMSLEY.

Holloway.—37, 38, 39, 40, and 41, Ashburton-gr., u.t. 32 yrs., g.r. 21*l.*, w.r. 148*l.* 4s.	640
Finsbury Park.—9, 11, 13, 17, 19, 21, 23, and 25, Hermitage-rd., and l.g.r. 33*l.*, u.t. 69 yrs., g.r. 2*l.*, y. and e.r. 330*l.*	2,250

By MAY & ROWDEN.

Soho.—7, Wardour-st. (s.), area 1,400 ft., f., y.r. 150*l.*	4,050
Greenwood.—Windmill-la., Building Land, 2¼ acres, f. and c.	520

By FRED. TAYLOR.

West Ham.—Stacey-rd., f., g.r. 21*l.*, reversion in 73 yrs.	470
Chadwell Heath.—Albany-rd., Leisure Hour, f., w.r. 28*l.* 12s.	350

By WEATHERALL & GREEN.

Wimbledon.—53, 55, 57, and 59, North-rd., and 2, Back-cottages, f., w.r. 91*l.*	950
Greenwich.—387, New Cross-rd. (s.), u.t. 44 yrs., g.r. 10s., y.r. 55*l.*	550
Ashburnham-rd., l.g.r. 29*l.* 10s., u.t. 39 yrs., g.r. 15s.	400

June 23.—By BEADEL WOOD & CO.

Ewhurst, Sussex.—Ockham House Estate, 203¼ acres, f., y.r. 225*l.*	3,825

By BEARD & SON.

Notting-hill.—Blenheim-cres., f.g. rents 48*l.* 10s., reversion in 55 yrs.	1,330
Chapel-rd., f.g. rents 50*l.* 8s., reversion in 56 yrs.	1,325
Cornwall-rd., f.g.r. 10*l.*, reversion in 53 yrs.	275

By DEBENHAM, TEWSON, RICHARDSON, & CO.

Finchley-road.—Avenue-mansions, f.g.r. 800*l.*, reversion in 88 yrs.	17,600

By HAMPTON & SONS.

Epping, Essex.—The Bower Estate, 43 acres., f.	3,425
Great Stanmore.—London-rd., freehold building land, 1¼ acres, f.	250

By HIND & SONS.

Hackney.—24 and 26, Lyte-st.; 56 to 64 (even), Wadeson-st.; 41 to 45 (odd), Lark-row, u.t. 14 yrs., g.r. 81*l.* 5s., w.r. 280*l.* 16s.	280

By MULLETT, BOOKER, & CO.

Hyde Park.—31, Oxford-ter., and 17, Oxford-mews, u.t. 25 yrs., g.r. 12*l.*, y. and w.r. 180*l.*	1,000
67, Sussex-gdns., u.t. 28¼ yrs., g.r. 15*l.*, p.	1,700

ORGILL, MARKS, & BARLEY.

Forest Gate.—Godwin-rd., Forest Gate Hotel, lease for 19 yrs., at 105*l.* per annum, with possession	5,100

By CHARLES SPARROW & SON.

Whetstone.—The Woodlands and stabling, 3 acres, f.	1,700

By LANGRIDGE & FREEMAN (at Tonbridge).

East Peckham, Kent.—Freehold wharf, 2¼ acres	900
Yalding, Kent.—Freehold Woodland, 4 acres	25
Tonbridge, Kent.—Stablings, buildings, and land, f.	330

By H. CHEFFINS (at Saffron Walden).

Saffron Walden, Essex.—Wills Ayley Farm, 304¼ acres, f., p.	4,775

By ALFRED PRESTON (at Ipswich).

Ashblocking, Suffolk.—The Walnut Tree Farm, 74 acres, f., p.	1,200
Earl Stonham, Suffolk.—The Rookery Farm, 72 acres, f., y.r. 75*l.*	1,000
Witnesham, Suffolk.—The Wood Farm, 90¼ acres, f., p.	2,065
Debach, Suffolk.—The Grove Farm, 44¼ acres, f., y.r. 56*l.*	700
Clopton, Suffolk.—Churchyard's Farm, 72 acres, f., y.r. 65*l.*	770
Campsea Ashe, Suffolk.—The Talbot Hotel, residence, and cottage, f., y.r. 76*l.*	1,835

By STANFORD & BROOM (at Halesworth).

Huntingfield, Suffolk.—The Low and Whitehouse Farms, and Westward Mill, 143 acres, f., y.r. 76*l.*, and p.	1,740

By W. HOUGHTON (at Colchester).

Colchester, Essex.—20 and 21, Trinity-st., f., y. and w.r. 29*l.* 18s.	320

June 24.—By ANDREWS & HALL.

Leyton.—14, Thornhill-rd., f., y.r. 20*l.*	265

By BAXTER, PAYNE, & LEPPER.

Ewell, Surrey.—Kingston-ter., f.g.r. 5*l.* 10s., Reversion in 88 yrs.	137
Epsom, Surrey.—Windmill-la., freehold nursery ground, 6 acres	800
North Cray, Kent.—Upper Ruxley Cottages, f.g.r. 10*l.*, reversion in 74 yrs.	240
Foot's Cray, Kent.—Bridge Cottages, High-st., f., w.r. 20*l.* 16s.	170
Ruxley Cottage and Stabling, f., y.r. 80*l.*	1,700
High-st. (s.); also Timber-built Forge and Yard, f., y.r. 25*l.*	275

dcup, Kent.—The Horse and Groom, b.-h., f., y.r. 85*l*. £1,900
1 and 2 Pound-pl., f., y.r. 60*l*. 855
7 and 8 Pound-pl., f., y.r. 35*l*. 455
Freehold Yard and Bldgs., y.r. 10*l*. 200
9, 10, 11, 12, and 13, Pound-pl., f., y.r. 104*l*. 1,200
St. Paul's Cray.—Chubb's Farm, and Chislehurst, Noake's Hill Farm, two rent charges, 8*l*. 12s. 185
Foot's Cray, Kent.—Manor Farm, rent charge, 7*l*. 4s. 180

By EDWIN FOX & BOUSFIELD.

St. Pancras.—74, Charlotte-st., f., y.r. 120*l*. 2,500
Westminster.—44, Poland-st. (s.), f., 85*l*. 2,200
Marylebone.—James-st., f.g.r. 50*l*., reversion in 75 yrs. 1,425

By ROBT. W. FULLER, MOON, & FULLER.

Anerley.—5 & 7, Thornsett-rd., u.t. 49 yrs., g.r. 11*l*., y.r. 84*l*. 600
Holloway.—24, Ringcroft-st., u.t. 36½ yrs., g.r. 6*l*., y.r. 36*l*. 280
Bethnal Green.—15, Bandon-rd., u.t. 39¼ yrs., g.r. 4*l*. 5s., w.r. 36*l*. 8s. 180

By FRANK JOLLY & JAMES.

Clapton.—Hilsea-st., f.r.g. 24*l*. 10s., reversion in 89 yrs. 530

By MARK LIELL & SON.

Forest Gate.—46, St. George's-rd., f., w.r. 29*l*. 18s. 270
Poplar.—44, 46, and 48, Tetley-st., u.t. 17 yrs., g.r. 12*l*. 12s., w.r. 70*l*. 4s. 200
Bow.—46, Alfred-st., u.t. 39 yrs., g.r. 4*l*. 10s., e.r. 34*l*. 250

By ROGERS, CHAPMAN, & THOMAS.

Hove, Brighton.—The Princes' Hotel, profit rentals, 550*l*., for 11 and 35 yrs. 3,050

By DOUGLAS YOUNG & Co.

Clapham.—King's-av., Pembroke, u.t. 16½ yrs., g.r. 20*l*., e.r. 80*l*. 300

By WYATT & SON (at Chichester).

Boxgrove, Sussex.—Main-rd., Cherry Tree and Vine Cottages, f. and c., y.r. 16*l*. 10s. 405
Chichester, Sussex.—38, Westgate; 33, and 34, Cleveland-rd.; and 88, and 89, Whyte-lane, f., y. and w.r. 81*l*. 15s. 1,110
Aldingbourne, Sussex.—High Reeds-la., freehold arable field, 5¼ acres 150

By A. & D. EDWARDS (at Hereford).

Burghill, Hereford.—Red House Farm, 36¼ acres, f. 1,825

By PEIRCE & THORPE (at Northampton).

Hunslope, Bucks.—Hales Folly Farm, 117 acres, f. 2,000
Dalscote, Northampton.—The Dalscote House Estate, 42 acres, f., y.r. 113*l*. 3,275
Astcote, Northampton.—Pasture land, 54 a. 3 r. 15 p., f., y.r. 80*l*. 1,893
Pattishall, Northampton.—The Skirf Farm, 72 acres, f., p. 2,322
Maidford, Northampton.—Farm, 86 a. 3 r. 14 p., f., y.r. 130*l*. 2,781

By DRIVER, JONAS, & Co. (at Selby).

Selby, Yorks.—Accommodation holding, 11 a. 1 r. 27 p., f., y.r. 30*l*. 930
Hambleton, Yorks.—Farm and arable land, 77 a. 3 r. 35 p., f., y.r. 158*l*. 3,200
Arable land, 37 a. 3 r. 17p., f., y.r. 43*l*. 1,464
Hambleton Hough, plantation and grass land, etc., 30 a. 3 r. 16 p., y.r. 13*l*., and p. 920
Buddings Farm, 169 a. 2 r. 28 p., f., y.r. 193*l*. 17s. 4,355
Hagg House Farm, 162 a. 3r. 24 p., f., y.r. 185*l*. 5,017
Monk Fryston, Yorks.—Breeks Wood, plantation, 9 a. 0 r. 5 p., f. 300
Hambleton, Yorks.—Accommodation holding and enclosures, 37 a. 2 r. 9 p., f., y.r. 48*l*. 1,629
Hillam, Yorks.—Holding and five enclosures, 52 a. 1 r. 13 p., f., y.r. 66*l*. 1,755

June 25.—By BOYTON, SONS, & TREVOR (at Wimbledon).

Wimbledon.—Dora-rd., freehold plot 230
Merton.—Grove-rd., 13 freehold plots 685

By CHESTERTON & SONS.

City.—Gresham-st., f., g.r. 60*l*., reversion in 16½ yrs. 5,000
4, Huggin-la., area 1,450ft., f., y.r. 422*l*. 4s. 10d. 8,350
Staines, Middlesex.—5, Fairfield-av., u.t. 60 yrs, g.r. 12*l*. 12s., e.r. 50*l*. 200
Chiswick.—33, Spencer-rd., f. p. 550

By DEBENHAM, TEWSON, RICHARDSON, & Co.

Tilford, Surrey.—Abbott's Lodge, 7a. 0r. 15p., f., p. 1,900
Stoke Newington.—88 and 88a, Matthias-rd. (s.), and 45, Watson-st., f., p. 215
Walthamstow.—57, Clarendon-rd., f., w.r. 24*l*. 215
Brompton-road.—Ovington-sq., l.g. rents 24*l*., u.t. 16 yrs., g. rents 6*l*. 4s. 120

By DYER, SON, & HILTON.

Blackheath.—55, Kidbrook Park-rd, u.t. 56½ yrs., g.r., 16*l*. 5s., p. 300

By KNIGHT & Co.

Willesden.—13, Poplars-av., u.t. 75 yrs., g.r. 8*l*., y.r. 30*l*. 230

By LOWE, GOLDSCHMIDT, & HOWLAND.

Hampstead.—69, Flask-walk and 9, New End-sq., f., w.r. 46*l*. 16s. 825

By NEWBON, SHEPHARD, & EDWARDS.

Stoke Newington.—25, 26, & 28, Sandbrook-rd., u.t. 56 yrs., g.r. 14*l*. 10s., w.r. 105*l*. 6s. 730
Crouch-hill.—62, Ashley-rd., u.t. 66 yrs., g.r. 10*l*., e.r. 55*l*. 330
Highbury.—95, Balfour-rd., u.t. 41 yrs., g.r. 6*l*. 6s., y.r. 50*l*. 350
Notting Hill.—10 and 12, Clarendon-pl. (s.), f. y.r. 52*l*. 530
Gospel Oak.—29, Oak Village, u.t. 40 yrs., g.r. 5*l*., y.r. 32*l*. 200
Islington.—64 and 66, Prebend-st., u.t. 19 yrs., g.r. 8*l*. 8s., y.r. 62*l*. 245

By STIMSON & SONS.

Battersea.—6 and 8, Ascalon-st., u.t. 35½ yrs., g.r. 6*l*., w.r. 54*l*. 12s. 290
Brixton.—2, Bonham-rd., u.t. 58½ yrs., g.r. 6*l*. 6s., e.r. 38*l*. 235
Tooting.—83, Ritherdon-rd., u.t. 82 yrs., g.r. 9*l*. 15s., e.r. 55*l*. 350
79, Longley-rd., u.t. 70 yrs., g.r. nil, e.r. 25*l*. 230
Lower Kennington-lane.—Nos. 19, 21, 23, 25, and 27 (s.), e. y.r. 136*l*. £1,520
Lambeth.—2 to 11, Wootton-st., f., w.r. 338*l*. 2,000
St. Mary Cray, Kent.—Anglesea-rd., the Rising Sun p.h., f., y.r. 40*l*. 620
Battersea Park-road.—The Masons' Arms, l.g.r. 100*l*., u.t. 54 yrs., g.r. 20*l*. 1,100
Chelsea.—25, Carlyle-sq., u.t. 46¼ yrs., g.r. 10*l*., y.r. 90*l*. 850
Forest Hill.—27, Church-rd., u.t. 24 yrs., g.r. 10*l*. 10s., y.r. 50*l*. 160

By WORSFOLD & HAYWARD.

Edmonton.—27 and 29, Warwick-rd., f.; 23 and 25, Warwick-rd., u.t. 81 yrs., g.r. 3*l*.; also 36 and 38, East Brettenham-rd., f., w.r. 124*l*. 16s. 695

By BOYTON, SONS, & TREVOR (at Walham Green).

Fulham.—8, Wandsworth Bridge-rd., u.t. 80 yrs., g.r. 2*l*., e.r. 45*l*. 460

June 26.—By HOOKER & WEBB.

Croydon.—37, North-end (s.), f., y.r. 190*l*. 3,650
Fulham.—10 and 12, Woolneigh-st., u.t. 87 yrs., g.r. 11*l*., w.r. 97*l*. 10s. 675

By KNIGHT, FRANK, & RUTLEY.

New Bond-street.—No. 126 (s.), City Corporation Lease for 40 yrs., Fine every 14 yrs. 30*l*. 18s. 4d., subject to g.r. 4*l*. 8s. 4d., y.r. 550*l*. 13,850
Harrow.—Springfield-rd., l.g. rents 16*l*. 10s., reversion in 95 yrs. 375
Chelsea.—2, King's-rd., and 1 and 3 Symons-st., u.t. 10 yrs., g.r. 18*l*. 18s., y.r. 110*l*. 775

By MELLERSH.

Guildford, Surrey.—135 & 136, High-st. (s.), f., y.r. 199*l*. 7s. 4d. 3,300
Godalming, Surrey.—Holloway Hill-house, 20 acres, f. 6,300

By PRICE, ARROW, & TAYLOR.

treatham.—95, Pathfield-rd., u.t. 90 yrs., g.r. 6*l*. 6s., e.r. 36*l*. 315
South Lambert.—4 & 5, Thorne-st., u.t. 24 yrs., g.r. 11*l*., w.r. 83*l*. 4s. 280

By STANLEY PARKES & BROWN.

Tottenham.—Markfield-rd., f.g.r. 6*l*., reversion in 62 yrs. 125
Hornsey.—33, Alexandra-rd., u.t. 69 yrs., g.r. 7*l*. 10s., y.r. 36*l*. 280

By TYSER, GREENWOOD, & Co.

Tottenham.—Devon-rd., l.g.r. 75*l*. 4s., u.t. 59½ yrs., g.r. 27*l*. 4s. 765

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PUBLISHER'S NOTICES.

Nat. Tel., 6112 Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME XCIV. (January to June, 1908) will be given as a supplement with the issue of July 18th.

CLOTH CASES for Binding the Numbers will shortly be ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 8d. each.

THE NINETY-FOURTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence, will be ready on the 28th inst.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ..... 6s. 0d.
Each additional line ..... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for series of Trade advertisements, and for front page and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

**** Stamps must not be sent, but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," 4, Catherine Street, W.C.

Advertisements for the current week's issue are received up to ONE p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after TWELVE NOON on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies addressed to the* OFFICE, 4, CATHERINE ST., STRAND, W.C., *free of charge.* Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed) 1s.

PRICES CURRENT OF MATERIALS.

**** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.		
Best Stocks	1	8	0	per 1000	alongside, in river.
Picked Stocks for Facings	2	10	0	,,	delivered.
Flettons	1	7	0	,,	at railway depôt.
Best Fareham Red	3	12	0	,,	,, ,,
Best Red Pressed Ruabon Facing	3	0	0	,,	,, ,,
Best Blue Pressed Staffordshire	3	15	0	,,	,, ,,
Do. Bullnose	4	0	0	,,	,, ,,
Best Stourbridge Fire Bricks	3	14	0	,,	,, ,,
GLAZED BRICKS.					
Best White and Ivory Glazed Stretchers	10	7	6	,,	,, ,,
Headers	9	17	6	,,	,, ,,
Quoins, Bullnose, and Flats	13	17	6	,,	,, ,,
Double Stretchers	15	17	6	,,	,, ,,
Double Headers	12	17	6	,,	,, ,,
One Side and two Ends	16	17	6	,,	,, ,,
Two Sides and one End	17	17	6	,,	,, ,,
Splays, Chamferred, Squints	15	10	0	,,	,, ,,
Best Dipped Salt Glazed Stretchers	10	7	6	,,	,, ,,
Headers	9	17	6	,,	,, ,,
Quoins, Bullnose, and Flats	13	17	6	,,	,, ,,
Double Stretchers	15	17	6	,,	,, ,,
Double Headers	12	17	6	,,	,, ,,
One Side and two Ends	16	17	6	,,	,, ,,
Two Sides and one End	17	17	6	,,	,, ,,
Splays, Chamferred, Squints	15	10	0	,,	,, ,,
Second Quality White and Dipped Salt Glazed	1	5	0	per 1000	less than best.

	s.	d.	
Thames and Pit Sand	6	6	per yard, delivered.
Thames Ballast	5	0	,, ,,
Best Portland Cement	28	0	per ton, ,,
Best Ground Blue Lias Lime	19	0	,, ,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	,, ,,
PORTLAND STONE (20 ft. average)—			
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	,, ,,
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	,, ,,

	s.	d.	
Ancaster in blocks	1	10	per ft. cube, deld. rly. depôt.
Beer ,,	1	6	,, ,,
Greenahill ,,	1	10	,, ,,
Darley Dale in blocks	2	4	,, ,,
Red Corsehill ,,	2	2	,, ,,
CloseburnRed Freestone	2	0	,, ,,
Red Mansfield ,,	2	4	,, ,,
YORK STONE—*Robin Hood Quality*	s.	d.	
Scappled random blocks	2	10	,, ,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super. ,,
6 in. rubbed two sides ditto, ditto	2	6	,, ,,
3 in. sawn two sides slabs (random sizes)	0	11½	per ft. cube ,,
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	,, ,,
1¼ in. to 2 in. ditto, ditto	0	6	,, ,,
HARD YORK—			
Scappled random blocks	3	0	,, ,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft. super. ,,
6 in. rubbed two sides ditto	3	0	,, ,,
3 in. sawn two sides slabs (random sizes)	1	2	,, ,,
2 in. self-faced random flags	0	5	,, ,,

SLATES.

In.	In.		£	s.	d.	
20	10	best blue Bangor	13	2	6	per 1000 of 1200 at r.d.
20	12	,, ,,	13	17	6	,, ,,
20	10	first quality,,	13	0	0	,, ,,
20	12	,, ,,	13	15	0	,, ,,
16	8	,, ,,	7	5	0	,, ,,
20	10	best blue Portmadoc	12	12	6	,, ,,
16	8	,, ,,	6	12	6	,, ,,
24	10	best Eureka unfading green	15	17	6	,, ,,
20	12	,, ,,	18	7	6	,, ,,
18	10	,, ,,	13	5	0	,, ,,
16	8	,, ,,	10	5	0	,, ,,
20	10	permanent green	11	12	6	,, ,,
18	10	,, ,,	9	12	6	,, ,,
16	8	,, ,,	6	12	6	,, ,,

TILES.

	s.	d.		
Best plain red roofing tiles...	42	0	per 1000	at rly. depôt.
Hip and Valley tiles ...	3	7	per doz.	"
Best Broseley tiles	50	0	per 1000	"
Do. Ornamental tiles	52	6	"	"
Hip and Valley tiles ...	4	0	per doz.	"
Best Ruabon red, brown, or brindled do. (Edwards) ...	57	6	per 1000	"
Do. Ornamental do.....	60	0	"	"
Hip tiles	4	0	per doz.	"
Valley tiles	3	0	"	"
Best Red or Mottled Staffordshire do. (Peakes).....	51	9	per 1000	"
Do. Ornamental do.....	54	6	"	"
Hip tiles	4	1	per doz.	"
Valley tiles.....	3	8	"	"
Best "Rosemary" brand plain tiles	48	0	per 1000	"
Best Ornamental tiles.....	50	0	"	"
Hip tiles	4	0	per doz.	"
Valley tiles.....	3	8	"	"
Best "Hartshill" brand plain tiles, sand-faced	50	0	per 1000	"
Do. pressed.....	47	6	"	"
Do. Ornamental do.....	50	0	"	"
Hip tiles	4	0	per doz.	"
Valley tiles.....	3	6	"	"
Staffordshire (Hanley) Reds or Brindled tiles.....	42	6	per 1000	,,
Hand-made sand-faced.....	45	0	,,	,,
Hip tiles	4	0	per doz.	,,
Valley tiles	3	6	,,	,,

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.		£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.....	13	10	0	...	15	0	0
Deals: best 3 by 9	13	0	0	...	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	...	12	0	0
Battens: best 2½ by 6 and 3 by 6...	0	10	0		less than 7 in. and 8 in.		
Deals: seconds.....	1	0	0	less than best.			
Battens: seconds.....	0	10	0	"		"	
2 in. by 4 in. and 2 in. by 6 in....	9	0	0	...	10	0	0
2 in. by 4½ in. and 2 in. by 5 in...	8	10	0	...	9	10	0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.			
¾ in.	1	0	0	"			
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4	10	0	...	5	0	0
Seconds	4	0	0	...	4	10	0
Small timber (8 in. to 10 in.) ...	3	12	6	...	3	15	0
Small timber (6 in. to 8 in.).....	3	0	0	...	3	10	0
Swedish balks	2	10	0	...	3	0	0
Pitch-pine timber (30 ft. average)	4	0	0	...	4	15	0

JOINERS' WOOD.	At per standard. £	s.	d.		£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.....	24	0	0	...	25	0	0
3 in. by 9 in.	22	0	0	...	23	0	0
Battens, 2½ in. and 3 in. by 7 in.	16	10	0	...	18	0	0
Second yellow deals, 3 in. by 1 in.	18	10	0	...	20	0	0
" " 3 in. by 9 in.	17	10	0	...	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	...	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	...	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	...	12	0	0
Petersburg first yellow deals, 3 in. by 11 in.....	21	0	0	...	22	10	0
Do. 3 in. by 9 in.	18	0	0	...	19	10	0
Battens	13	10	0	...	15	0	0
Second yellow deals, 3 in. by 11 in.....	16	0	0	...	17	0	0
Do. 3 in. by 9 in.	14	10	0	...	16	0	0
Battens	11	0	0	...	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	...	14	0	0
Do. 3 in. by 9 in.....	12	10	0	...	14	0	0
Battens	10	0	0	...	11	0	0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	14	10	0	...	15	10	0
" " 3 in. by 9 in.	13	10	0	...	14	10	0
Battens.....	11	0	0	...	12	0	0
Second white deals, 3in. by 11 in.	13	10	0	...	14	10	0
" " 3 in. by 9 in.	12	10	0	...	13	10	0
Battens	10	0	0	...	11	0	0
Pitch-pine: deals.....	18	0	0	...	21	0	0
Under 2 in. thick extra	0	10	0	...	1	0	0
Yellow pine—First, regular sizes	44	0	0	upwards.			
Oddments	32	0	0	"			
Seconds, regular sizes	33	0	0	"			
Oddments	28	0	0	"			
Kauri Pine—Planks, per ft. cube..	0	3	6	...	0	5	0
Danzig and Stettin Oak Logs— Large, per ft. cube	0	3	0	...	0	3	6
Small " "	0	2	6	...	0	2	9
Wainscot Oak Logs, per ft. cube..	0	5	6	...	0	6	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	8½	...	0	0	9½
¾ in. do. do	0	0	7	...		—	
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch...	0	0	9	...	0	1	0
Selected, Figury, per ft. super. as inch	0	1	6	...	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	...	0	1	0
Teak, per load	17	0	0	...	22	0	0
American Whitewood Planks, per ft. cube.....	0	4	0	...	0	5	0
Prepared Flooring, etc.—	Per square.						
1 in. by 7 in. yellow, planed and shot	0	13	6	...	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	...	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	...	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	...	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	...	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	...	0	16	6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0	11	0	...	0	13	6
1 in. by 7 in. " "	0	14	0	...	0	18	0
¾ in. by 7 in. white " "	0	10	0	...	0	11	6
1 in. by 7 in. " "	0	12	9	...	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	7	0	0	...	7	10	0
Compound Girders, ordinary sections	9	0	0	...	10	0	0
Steel Compound Stanchions	11	0	0	...	12	0	0
Angles, Tees, and Channels, ordinary sections	9	0	0	...	10	0	0
Flitch Plates	9	0	0	...	9	10	0
Cast Iron Columns and Stanchions including ordinary patterns.....	7	10	0	...	8	10	0

METALS.

	Per ton, in London. £	s.	d.		£	s.	d.
IRON— Common Bars	8	10	0	...	9	0	0
Staffordshire Crown Bars, good merchant quality	8	15	0	...	9	5	0
Staffordshire "Marked Bars" ...	10	10	0	...		—	
Mild Steel Bars	8	15	0	...	9	5	0
Hoop Iron, basis price	9	5	0	...	9	10	0
" " Galvanised	17	0	0	...		—	
("And upwards, according to size and gauge.)							
heet Iron Black— Ordinary sizes to 20 g.	9	15	0	...		—	
" " 24 g.	10	15	0	...		—	
" " 26 g.	12	5	0	...		—	
Sheet Iron, Galvanised, flat, ordinary quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.....	15	0	0	...		—	
Ordinary sizes to 22 g. and 24 g.	15	10	0	...		—	
" " 26 g.	16	10	0	...		—	
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	18	0	0	...		—	
" " 22 g. and 24 g.	18	10	0	...		—	
" " 26 g.	20	0	0	...		—	
Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 8 ft. 20 g.	14	10	0	...		—	
" " 22 g. and 24 g.	14	15	0	...		—	
" " 26 g.	16	5	0	...		—	
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	12	0	0	...		—	
Best Soft Steel Sheets, 22 g. & 24 g.	13	0	0	...		—	
" " " 26 g.	15	0	0	...		—	
CUT NAILS, 3 in. to 6 in. .... (Under 3 in., usual trade extras.)	10	10	0	...	11	0	0

LEAD, &c.	Per ton, in London £	s.	d.		£	s.	d.
LEAD—Sheet, English, 3lb. and up.	15	15	0	...		—	
Pipe in coils	16	5	0	...		—	
Soil pipe	18	15	0	...		—	
Compo pipe.....	19	15	0	...		—	
ZINC—Sheet— Vieille Montagne .....ton	27	5	0	...		—	
Silesian.....	27	0	0	...		—	
COPPER— Strong Sheet.....per lb.	0	1	0	...		—	
Thin " ..... "	0	1	1	...		—	
Copper nails ..... "	0	0	10	...		—	
Copper wire ..... ,,	0	0	10	...		—	
BRASS— Strong Sheet..... "	0	0	11	...		—	
Thin..... "	0	1	0	...		—	
TIN—English Ingots..... "	0	1	4½	...		—	
SOLDER—Plumbers' ..... "	0	0	7	...		—	
Tinmen's ..... "	0	0	9½	...		—	
Blowpipe ..... "	0	0	11½	...		—	

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds.....	2½d. per ft. delivered.
" fourths	1¼d. " "
21 oz. thirds	3d. " "
" fourths.....	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d. " "
" fourths.....	4½d. " "
Fluted Sheet, 15 oz.....	3½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

⅛ Hartley's	2½d. per ft. delivered.
⅛ "	2½d. " "
½ "	2½d. " "
Figured, Oxford Rolled, and "Oceanic" Glass, white	3½d. " "
" tinted ...	5½d. " "
OTHER GLASS— "Arctic" Glass, white	4d. " "
" " tinted.....	5½d. " "
" " ruby and opalescents	1s. " "

OILS, &c.		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	0
" " in barrels	"	0	2	1
" " in drums	"	0	2	3
Boiled ,, in pipes	"	0	2	2
" " in barrels	"	0	2	3
" " in drums	"	0	2	5
Turpentine in barrels	"	0	2	8
" in drums	"	0	2	11
Genuine Ground English White Lea	per ton	21	10	0
Red Lead, Dry	"	20	10	0
Best Linseed Oil Putty	per cwt.	0	7	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.	Per gallon. £	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak.....	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak.....	0	10	0
Superfine Hard-drying Oak, for seats of Churches.....	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	16	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flatting Varnish	0	18	0
White Copal Enamel.....	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size.....	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain.....	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish.....	0	10	6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcement of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

BARNSLEY.—For sewage main, Burton-grange, near Stairfoot, for the Town Council. Mr. J. H. Taylor, Borough Surveyor, Manor House Offices, Barnsley:—

20-in. Cast-iron Pipes.

Sheepbridge Coal & Iron Co., near Chesterfield* £1,482 15 3

Laying and Jointing Pipes.

Kaye Bros., Huddersfield* 499 18 9

BICKER.—For the erection of new farm buildings and alterations for Mr. Edward Cooley, Drury House, Bicker, near Boston. Mr. H. Kidd, architect, Kirton, near Boston:—

J. W. Darby.....	£435	G. Barnsdale, Dorrington*	£335
Pinder & Son	432		

BISLEY.—For Bungalow Hospital, Bisley (new isolation ward, etc.). Mr. R. G. Hammond, F.R.I.B.A., architect, 16, Essex-street, Strand:—

E. Cheeseman	£825	Norris & Co., Sunningdale*	£790
W. Smith	824		

BOOTHBY GRAFFOE.—For sewerage works, for the Branston Rural District Council. Mr. T. R. Howitt, surveyor, 73, St. Catherine's-grove, Lincoln:—

W. Pattinson & Sons, Ltd., Ruskington, Sleaford..... £595 17 2

BRIGHTON.—For alterations and additions, Pelham-street school, for the Education Committee for the County Borough of Brighton:—

Holloway Bros.	£1,408 4 1	Rowland Bros.	£1,118 0 0
J. Barnes & Sons	1,324 0 0	Bostel Bros. ..	1,083 0 0
T. E. Nye	1,288 3 0	R. Cook & Sons, Crawley*....	1,013 0 0
G. R. Lockyer	1,198 0 0		
Hockley & Co.	1,183 8 7		

BURY ST. EDMUNDS.—For pumps for the workhouse, for the Guardians. Mr. J. Campbell Smith, C.E., County Chambers, Bury St. Edmunds:—

Cornish & Lloyds, Bury St. Edmunds £116

CHEADLE.—For sewerage works, for the Rural District Council. Mr. F. T. Inskip, surveyor, Cheadle:—

Ball & Robinson	£481 19 0	J. & W. Ball ..	£383 0 0
F. Barke	474 7 6	W. Williams ..	370 0 0
J. Pattinson ..	465 0 0	J. Taylor & Son, Basford, Stoke-on-Trent*....	347 13 9
Saunders & Torrance	445 0 0		

CHURWELL.—Accepted for works in connexion with new tannery, tan pits, etc., Millshow Leather Works, for Messrs. W. L. Ingle, Ltd. Mr. T. A. Buttery, architect, Queen-street, Morley, and at Leeds:—

Masons: W. & H. Sykes, Westfield-road, Morley	£1,785 14 6
Joiners and Roof: A. Furness, Queen-street, Morley	1,014 0 0
Ironfounders: I. Lees & Son, Ltd., Gomersal	121 14 8
Patent Glazing: Standard Patent Glazing Co., Ltd., Dewsbury.....	211 9 2
Painters: Scott Bros., Churwell	42 15 0

CLEETHORPES.—For erecting a new infants' block at the Elliston-street Schools, for Lindsey County Council Education Committee. Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln:—

G. H. Vickers ..	£5,126 0	W. Kirton	£4,724 10
W. Ion	4,986 0	H. J. Thompson	4,690 0
G. F. Mashford & Sons	4,953 18	A. E. Faulks ..	4,687 0
H. W. Parker & Son.....	4,800 0	T. Barlow & Co.	4,405 0
Hewins & Goodhand	4,769 0	H. S. & W. Close, Lincoln*	4,183 0

COALVILLE.—For the erection and completion o stables, warehouses, cart sheds, cottage, etc., in Margaret and Owen streets, Coalville, for the Coalville Working Men's Co-operative Society, Ltd. Mr. T. I. McCarthy, architect, Central Chambers, Coalville. Quantities by architect:—

Maule & Co.....	£3,598 0 0
Berrisford & Dolman.....	3,530 0 0
Bradshaw Bros.	3,485 6 6
E. Morley & Son.....	3,440 0 0
Haycock & Sons	3,397 0 0
S. Hickman	3,363 0 0
Barker & Sons.....	3,339 0 0
E. Orton	3,249 0 0
E. Fox	3,235 0 0
Griffin Bros.....	3,224 10 0
G. Hodges	3,219 0 0
A. B. Moss, Coalville*	3,100 0 0

CROWBOROUGH.—For new house, "Whinfell," Crowborough, for the Hon. Mrs. Brougham. Mr. R. G. Hammond, architect, Strand, London:—

Norris & Co.	£3,280	Strange & Sons, Ltd.	£3,020
J. Leney & Sons ..	3,250	Connor Bros., Crowborough*	2,777
W. Smith	3,245		

DEVONPORT.—For erecting a new coal-house at Workhouse, for the Guardians. Messrs. Thornely & Rooke, architects, 29, St. Aubyn-street, Devonport. Quantities by architects:—

G. H. Smith & Son, Salisbury Terrace, Devonport £169 15 0

ENFIELD.—For extensions to the Grammar School for Boys, for the Governors of the Grammar School. Mr. H. G. Crothall, Architect to the Governors, Middlesex Guildhall, Westminster:—

Treasure & Son....	£6,696	A. Porter	£6,461
G. Neal	6,615	J. Dorey & Co., Ltd.	6,387
W. Johnson & Co., Ltd.....	6,583	F. Gough & Co.....	6,362
W. J. Renshaw....	6,549	G. E. Wallis & Son, Ltd.....	6,348
J. Barker & Co., Ltd.	6,540	W. Lawrence & Son	6,292
Mattock Bros.	6,533	A. Fairhead & Son.	6,233
F. G. Minter	6,490	H. Knight & Son‡..	6,135

‡ Recommended for acceptance.

ENFIELD.—For new county school for girls and technical institute, for the Middlesex County Council. Mr. H. G. Crothall, Architect to the Middlesex Education Committee, Middlesex Guildhall, Westminster :—

A. Porter	£13,524	Mattock, Bros.	£12,934
J. Barker & Co., Ltd.	13,475	F. Gough & Co.	12,919
G. Neal	13,412	J. Dorey & Co., Ltd.	12,809
G. Minter	13,392	W. Lawrence & Son	12,652
W. J. Renshaw	13,377	H. Knight & Son	12,456
G. E. Wallis & Son Ltd.	13,089	A. Fairhead & Son	12,400
W. Johnson & Co.	12,984	Treasure & Son‡	12,379

‡ Recommended for acceptance.

ENFIELD.—For the erection of stables, cottage, etc., for Enfield District Council. Mr. R. Collins, Surveyor :—
A. J. Dearsley, Ponder's End* £889

GORSEMOIR.—For erecting a new Independent Chapel, for the Trustees of Ebenezer Chapel. Messrs. Evans & Jones, architects and surveyors, Greenfield, Llanelly and at Port Talbot :—

T. & J. Brown	£3,630 0 0	Lloyd Bros., Swansea*	£3,286 19 11
Price Bros.	3,448 10 0	Davies & Co.	3,180 0 0
Mercer & Co.	3,299 0 0		

HAROLD WOOD.—For alterations, etc., to "The Grange," for West Ham Borough Council. Mr. J. G. Morley, Borough Engineer, Town Hall, West Ham, E. :—

T. W. Moss	£800 0 0	F. W. Jarvis	£634
J. Johnson	712 0 0	Partridge Bros.	630
A. Webb	679 0 0	J. T. Luton	625
Barrett, Smith, & Co.	677 9 0	H. C. Horswill	622
J. S. Hammond & Son	675 0 0	Dowsing & Davis	603
Hammond & Miles	654 4 6	A. E. Symes	593
Welbking & Co.	648 0 0	A. A. Sedcole	570
		J. W. Jerram, East Ham*	544

HECKINGTON.—For the erection of a villa residence to be built at Heckington, near Sleaford, for Mr. James Southern, Beaconthorpe, Cleethorpes. Mr. H. Kidd, architect, Kirton, near Boston :—

G. W. Machin	£525	J. Langley & Son Kirton*	£393
D. Mackeass	466		

HIGH WYCOMBE.—For rebuilding of Union Baptist Church, for the Trustees. Mr. T. Thurlow, architect High Wycombe, Bucks. Quantities by the architect :—

		Extra if oak Fittings.
Barker & Co.	£5,877	—
J. Darlington	5,771	£110
Y. J. Lovell	5,697	350
J. Mead	5,695	145
C. H. Hunt & Son	5,521	280
H. Flint	5,487	290
G. H. Gibson	5,425	90
R. Cleaver, Northampton*	5,260	200

ISLEWORTH.—For cleaning, painting, etc., Infirmary buildings, for the Guardians :—

H. J. Robinson	£171 15	D. Heath	£122 10
Stocking	160 0	Ferris Bros.	117 0
A. Cutler	147 0	Richards	108 10
Wright	146 10	P. McCarthy, 144, Fulham-road*	101 0
Nichols Bros.	139 0		
J. Hidden	132 0		

KENDAL.—For pulling down and rebuilding the Mason's Arms Inn, Stranmon-gate, for the Trustees of the Ralph Ford Hall Estate. Mr. J. Hutton, architect, Kendal. Quantities by architect :—

Walling and Slating : J. Dixon & Son
Carpenter and Joiner : J. Allen .... } £520
Plumbing : Lawrence, Airy, & Co. ..
Painters and Glaziers : G. Lyon & Son
Plasterers : Woodburn & Storey ....
[All of Kendal.]

LEYTON.—For cleaning, painting, repairs, and alterations to schools, for the Education Committee. Mr. W. Jacques, A.R.I.B.A., 2, Fen-court, Fenchurch-street, E.C. :—

Improvements to Caretakers' Houses.

	Cann Hall-road.	Downsell-road.
Vigor & Co.	£235 0 0	£312 0 0
B. E. Nightingale	229 0 0	309 0 0
E. A. Hough	185 0 0	283 0 0
J. J. Quarterman	165 0 0	292 10 0
F. J. Coxhead	164 10 0	247 0 0
W. J. Clemens	141 0 0	245 0 0
A. E. Symes	154 0 0	228 0 0
E. A. Russell	150 0 0	198 0 0
J. T. Luton	129 0 0	198 0 0
J. & J. Dean, Walthamstow*	123 0 0	194 0 0

Additional Class Room, Lea Bridge-road Schools.

E. A. Hough	£645	W. J. Clemens	£510
Nightingale	598	A. E. Symer	489
Quarterman	595	J. & J. Dean	445
F. J. Coxhead	549	J. T. Luton*	439

Fence to Vacant Land adjoining Church-road Schools.

Vigor & Co.	£178 0 0	F. J. Coxhead	£127 0 0
B. E. Nightingale	159 0 0	Simmons & Co.	123 0 0
E. A. Hough	145 0 0	W. J. Clemens	116 12 6
J. J. Quarterman	130 0 0	A. E. Symes	109 0 0
		J. & J. Dean*	105 0 0

LONDON.—Accepted for carrying out paving works, for the Corporation :—

French Asphalt Company—		
Repaving carriageway of Fenchurch-street (eastern end) with asphalt	£1,184	13 4
Paving carriageway of Warwick-square with asphalt	333	17 0
Paving footways of the following streets with asphalt :		
King's Head-court, Holborn	80	13 4
Holborn (south side)	445	8 8
Billiter-street (part west side)	36	12 4
Cobb's-court	21	11 0
St. James's-court	27	4 8
Beech-street (south side)	57	13 4
Silver-street	78	17 0
Stationers' Hall-court	62	1 4
Limmer Asphalt Paving Company—		
Repaving carriageway of Aldgate with asphalt	1,458	16 6
London Asphalt Company—		
Paving carriageways of the following streets with asphalt :		
Hutchison-street	160	17 6
Duke's Head-passage	45	0 0
Paving footways of the following streets with asphalt :		
Ave Maria-lane	37	4 9
Farringdon-street (east side, Plum-tree-court, to Charterhouse-square)	292	7 6
Burgon-street	54	6 6
Friars-street	50	12 6
Addle-street	74	16 3
Cripplegate-buildings	47	19 9
Improved Wood Paving Company—		
Paving carriageways of the following streets with wood :		
George-lane, St. Mary-at-Hill	34	0 0
Knightrider-street, from Coleman-street, to Bell-yard	149	3 6
Val de Travers Asphalt Company—		
Paving footways of the following streets with asphalt :		
London Wall (south side, Basinghall-street to Wood-street)	79	9 10
Gresham-street (Aldermanbury to Coleman-street)	192	15 2
Hobman & Co., Ltd.—		
Paving the Northern section of Finsbury-circus with tar macadam	385	0 0

LONDON.—Reconstruction of part of sewer in Ashlone-road, Putney, for Wandsworth Borough Council. Mr. P. Dodd, Borough Surveyor for Western District, 41, High-street, Wandsworth :—

Jackson & Love	£666 16 0 / 50 0 0‡
Sheppard & Packham	310 0 0
Potter & Co.	283 5 0
E. & E. Iles	278 0 0
T. Adams	249 0 0
C. W. Killingback & Co.	239 0 0
J. Mears	237 0 0
A. T. Catley	236 0 0
J. A. Ewart	230 0 0
R. Dykes	230 0 0
E. Parry & Co.	225 0 0
J. Stone	223 9 2
J. & W. Drake	208 15 0
H. Bentham	188 0 0
J. E. Etheridge, 8A, Rollins-street, S.E.†	173 7 6

[The Borough Engineer and Surveyor's estimate, comparable with the tenders, was £210.]
‡ Supplementary estimate.

LONDON.—For executing necessary works of repair upon part of Albert-road, Southfield, for Wandsworth Borough Council. Mr. P. Dodd, Borough Surveyor for Western District, 41, High-street, Wandsworth :—

Potter & Co.	£280 16 8	E. Parry & Co.	£243 0 0
E. & E. Iles	277 0 0	T. Adams	224 0 0
J. Mowlem & Co., Ltd.	264 0 0	R. Dykes	221 15 0
J. E. Etheridge	257 0 0	J. Mears, Crab Tree Wharf, Fulham, S.W.†	156 0 0
T. King	245 0 0		

[The Borough Engineer and Surveyor's estimate was £200.]

LONDON.—Supply of materials and new street works at Moundfield-road, Clapton, for Hackney Borough Council. Mr. Norman Scorgie, Borough Engineer and Surveyor :—

Fry Bros.	£808 15 7	G. Porter	£663 0 8
T. Adams	689 3 0	G. J. Anderson	648 3 3
R. Dykes	686 11 11	A. T. Catley, 23, Lloyd-square, W.C.†	624 14 0
E. T. H. Bloomfield	675 0 0	J. W. Jerram	550 11 11
W. Griffiths & Co., Ltd.	669 15 7		

LONDON.—For repairing Abbey-mills and Isle of Dogs pumping-stations, for the London County Council :—

Chapman & Sturton	£602 18 9
A. Webb	425 0 0
W. Harris	348 0 0
E. Proctor & Sons	340 3 4
A. E. Symes	328 0 0
J. E. Measor & Sons, Plaistow*	290 5 10

LONDON.—For kerbing, channelling, and making up the roadway of Penerley-road, and paving footway with artificial stone, for Lewisham Borough Council. Mr. E. van Putten, Borough Surveyor :—

		Footways, per yd. super. s. d.
Chittenden & Simmons, Ltd.	£2,544	—
B. Martin	2,050	—
J. Mowlem & Co., Ltd.	1,872	4 6
H. Woodham & Sons	1,870	—
Fry Bros.	1,798	—
W. Pearce, David's-road, Forest Hill, S.E.†	1,768	3 4

Mr. Pearce's tenders are also provisionally accepted for footway paving in two other roads, at 3s. 4d. per yd. super.

LONDON.—For the erection of extension to superintendent's lodge at the cemetery of the Kensington Borough Council. Mr. A. R. Finch, Borough Engineer and Surveyor :—

W. J. Parrish	£448 12 6
J. & W. Drake	432 10 0
Barratt Bros.	420 0 0
Nash & Son	398 0 0
W. Braybrook	353 0 0
G. Altria, 28, Tavistock-crescent, Westbourne Park, W.*	316 10 0

Borough Engineer's estimate, £305.

LONDON.—Repair of clock tower, Newington Butts, for Southwark Borough Council :—

E. J. & A. T. Bradford	£800 0 0
Webber & Corbent	625 0 0
N. C. Szerelmey & Co.‡	—

† Accepted subject to the scaffolding being erected by Borough Engineer, reducing the tender to £545.
‡ Offer to execute the work at 12½ per cent. over cost.

LONDON.—For alterations and additions, 19, Brompton-square, S.W. Mr. R. G. Hammond, F.R.I.B.A., architect, 16, Essex-street, Strand :—
W. Smith, Camberwell* £705

LONDON.—For No. 25, Upper Brook-street, W. (structure only), new house for Sir Louis McIver, Bart., M.P. Mr. R. G. Hammond, architect, Strand, W.C. :—

J. Garlick, Ltd.	£11,415	Holloway Bros., Ltd.	£10,800
Holland & Hannen	10,984	Prestige & Co.*	10,612

LONDON.—For reconstruction of engine-house block, chief station of the fire brigade, for the London County Council :—

Kirk & Randall	£4,676
Holloway Bros. (London), Ltd.	4,390
J. Carmichael	4,313
Higgs & Hill, Ltd.	4,253
Spencer, Santo, & Co.	4,214
E. Lawrance & Sons	4,083
C. Wall, Ltd.	4,080
F. & H. F. Higgs	3,900
G. Munday & Sons	3,670
H. L. Holloway, Union Works, Church-street, Deptford, S.E.*	3,652

LONDON.—For filth-hoist cages, Abbey-mills pumping station, for the London County Council :—

W. T. Towler & Son, Ltd.	£441 0 0
Thames Iron Works, etc., Co., Ltd.	341 0 0
Flavell & Churchill, East Greenwich	297 10 0

LONDON.—For new grids, etc., for main pumps, Abbey-mills pumping station, for the London County Council :—

Seagers, Ltd.	£116 8 0
Hunter & English, Ltd.	112 15 0
The Thames Iron Works, etc., Co., Ltd.	106 0 0
Clayton, Goodfellow & Co., Ltd., Blackburn*	96 10 0

LONDON.—Painting of arc lamp-posts and switch pillars, for Hackney Borough Council. Mr. L. L. Robinson, Borough Electrical Engineer :—

Snewin Bros. & Co.	£350 17 6
Proctor & Son	217 4 0
Vigor & Son	175 6 0
Castle & Son	173 4 6
Woolaston Bros.	169 17 0
Martin & Co.	164 12 6
Barnett & Power	154 15 0
W. G. Beaumont & Sons, Priory Works, Priory-street, Bromley-by-Bow†	121 11 10

MORESBY (Whitehaven).—Accepted for erecting a pair of semi-detached cottages at Milligrove, for Mrs. Burnyeat. Mr. J. S. Stout, architect, 36, Lowther-street, Whitehaven. Quantities by architect :—

Mason : J. I. Wilson & Co., Grey-street, Workington	£259 15 0
Joiner : R. Bragg, Cumberland-street, Workington	106 9 4
Plumber : W. H. Holloway, Queen-street, Whitehaven	16 2 3
Plasterer : R. Gamman, Queen-street, Whitehaven	73 2 10
Slater : E. Burrow, Station-road, Workington	36 5 0
Painter : R. W. Bonsey, Lowther-street, Whitehaven	8 2 3

MORLEY (Yorks).—Accepted for alterations and additions to residence, Wide-lane, for Mr. W. Scartb. Mr. T. A. Buttery, architect, Queen-street, Morley, and at Leeds :—

Masons : Pearson & Ainsworth, Morley	£510 0 0
Joiner : S. Harrison, Morley	152 10 0
Plumber : J. W. Stakes, Morley	60 0 0
Plasterers : G. Crossley & Sons, Birstall	45 16 0
Slater : J. Kellett, Morley	12 7 0

PORTSMOUTH.—For new warehouse, depository, van sheds, etc., for Messrs. W. Boots & Co., of Portsmouth and Chatham. Plans, specifications, and quantities prepared by Mr. W. Bates White, 173, Fawcett-road, Southsea :—

G. J. Davis	£3,400	H. Buckett	£2,995
J. Harding	3,195	F. Privett	2,987
E. & A. Sprigings	3,180	J. Croad	2,975
W. & R. Light & Sons	3,177	M. Colthemp*	2,900
H. Jones	3,174	J. Mitchell‡	2,760
J. Crockerell	2,995		

‡ Withdrawn.

Painting Exterior of Schools.

—	Capworth-street.	Downsed-road.	Morlington-road.	Ruckholts.	Trumpington-road.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
F. J. Coxhead, Leytonstone	145 0 0*	84 0 0*	184 0 0	103 0 0*	*71 0 0
W. J. Clemens	200 0 0	140 0 0	200 0 0	160 0 0	120 0 0
E. A. Hough	190 0 0	110 0 0	200 0 0	169 0 0	101 0 0
J. T. Luton	165 0 0	98 0 0	149 0 0	139 0 0	88 0 0
B. E. Nightingale	195 0 0	138 0 0	186 0 0	159 0 0	98 10 0
J. F. Penn, Walthamstow	164 5 0	—	136 15 0*	167 10 0	—
J. J. Quarterman	218 0 0	135 0 0	234 0 0	188 0 0	130 0 0
Richards & Son	156 0 0	92 10 0	137 10 0	185 0 0	86 0 0
E. A. Russell	—	141 3 0	—	—	127 5 0
Simmons & Co.	—	121 10 0	—	—	—
A. E. Symes	188 0 0	99 0 0	169 0 0	147 0 0	92 0 0
Vigor & Co.	185 0 0	117 0 0	176 10 0	195 0 0	110 0 0
Welbking & Co.	188 0 0	115 0 0	168 0 0	168 0 0	99 0 0
Wollaston & Co.	147 0 0	105 0 0	140 0 0	130 0 0	150 0 0

PORTSMOUTH.—For painting and cleaning schools, for the Education Committee. Mr. A. H. Bone, Surveyor, Cambridge Junction, Portsmouth:—

—	Wellington-place School.	Binsteed-road School.	Church-street School.	S. Mary's-road School.	Portsmouth-road School.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
C. Williams	—	—	—	35 0 0	—
A. E. Ivemey	—	—	—	41 0 0	147 0 0
E. Bayly	106 1 8	152 11 6*	179 12 0	30 11 6*	121 3 4
J. O. Humby & Sons	102 0 0	230 0 0	170 0 0*	54 0 0	140 0 0
T. L. Norman & Son	150 0 0	250 0 0	228 0 0	—	—
J. H. Tilbury	139 0 0	197 10 0	175 0 0	41 15 0	163 0 0
M. Coghlan	—	—	183 7 6	37 0 0	124 6 0
H. Carter & Sons	87 10 0*	160 0 0	149 0 0	43 10 0	98 10 0*
Pryer & Sons	157 0 0	168 0 0	227 10 0	—	133 0 0
F. Privett	—	—	—	42 10 0	150 0 0
G. V. Thomas	102 10 0	243 0 0	180 0 0	39 18 0	118 5 0

[All local firms.]

REIGATE.—For storm-water relief sewer in Bell-street, Reigate, for the Town Council. Mr. F. T. Clayton, C.E., Borough Surveyor:—

R. Wilson £293 0 0
G. S. Faulkner, Reigate* 174 0 0

RODLEY.—For 800 yds. of 12 in. pipe sewers, for Calverley Urban District Council. Mr. W. Walker, Surveyor, Council Offices, Calverley:—

J. A. Walkinson	£414 0 0	J. T. Chandler..	£336 7 3
Wood Bros., Ltd.	399 15 3	T. Egan & Son..	330 14 0
H. Arnold & Son	384 0 0	Appleyard Bros.	320 0 0
Parkin & Co. ..	380 18 0	R. Naylor & Son	316 0 0
T. Smith	369 16 9	J. R. Fife, Jun.	305 0 0
H. Barker	362 10 4	E. Long	300 0 0
A. Graham & Co.	362 10 0	J. W. Pickthall..	280 0 0
W. Pratt & Son	359 0 0	A. Sykes	277 3 8
A. Graham & Son	355 0 0	J. Hudson, Horsforth* ..	268 16 5
J. Totty	336 15 0		

ROYSTON.—For new Home for Little Girls, Royston, for the National Refuges for Homeless and Destitute Children. Mr. R. G. Hammond, F.R.I.B.A., architect, 16, Essex-street, Strand:—

Courteney & Fairbairn	£7,654	Sindall	£6,940
Gimson & Co.....	7,214	Mattock & Parsons	6,660
Hunt	7,019	Ward & Sons.....	6,647
W. Saint.....	6,958	Jacklin & Co., Royston*	6,435

SOUTHAMPTON.—For private street works, Dyer-road, for the Corporation. Mr. J. A. Crowther, Borough Engineer:—

F. Grace ..... £454 13 0 | F. Osman* £396 0 0
J. Douglas 444 0 0

[All of Southampton.]

SPENNYMOOR.—For street making, etc., Ruby-terrace, and Ruby-terrace streets, for the Urban District Council. Mr. C. R. Spencer, Surveyor, Silver-street, Spennymoor:—

G. Pickering, West Hartlepool* £120 5

SUNNINGDALE.—For alterations and additions to "The Ridge," Sunningdale, for Sir Harry Samuel. Mr. R. G. Hammond, architect, Strand, London:—

Mattock & Parsons £1,933 | Norris & Co., Sunningdale* £1,576
H. Charman 1,734

TANFIELD.—For extension of sanitary pipe sewer from the West-end of Burnopfield to Leazes, for the Urban District Council. Mr. R. Heslop, Surveyor, Burnopfield:—

J. Nevin, Lintz, Burnopfield..... £115 7

TIBSHELF.—For erecting new Wesleyan Chapel, for the Trustees. Mr. J. E. Goodacre, architect, 4, Stockwell-gate, Mansfield:—

Bosworth & Lowe.....	£1,221 0 0	A. E. Bristowe	£1,115 17 4
F. Lee	1,180 0 0	T. Barlow & Co.....	1,100 0 0
Vallance & Blythe	1,165 0 0	Evans Bros...	1,090 0 0
Harris & Hunt	1,155 0 0	Cartledge & Parr, Mansfield*.....	1,050 0 0
J. Beckett....	1,140 0 0		
G. Frisby	1,125 0 0		

ULVERSTON.—For reconstructing a retaining and fencewall at High Newton, for the Rural District Council. Mr. W. F. Y. Molineux, surveyor:—

B. Birch, Cartmel*..... £83 6 5

WATFORD.—For building vagrant wards for Watford Board of Guardians:—

G. & J. Waterman	£354 0	C. Brightman & Son	£317 0
Clifford & Gough...	343 0	J. L. Tylor, 133, Vicarage-road, Watford*	298 0
J. Darvill.....	335 0		
L. Ensor	333 0		
Clark Bros.	324 10		

WATFORD.—For providing additional temporary accommodation for Casual Paupers at the Union Workhouse, Watford, for the Guardians. Mr. C. P. Ayres, architect, Burvale, Watford. Quantities by architect:—

J. L. Tyler, Vicarage-road, Watford*.. £298 0 0

WELLESBOURNE.—For alterations and additions to Chadley, Wellesbourne, near Warwick for Capt. Bernard Granville. Mr. C. M. C. Armstrong, architect, 5, High-street, Warwick:—

J. G. Fincher & Co. £620 0 0
A. E. Sheasby, Barford* 595 0 0

WIGAN.—For outfall sewer, for the Town Council. Mr. Wm. Bolton, Borough Surveyor:—

W. Jowett, Prescot* £16,641 0 5

WOLSTANTON.—For erecting boys', girls', and infants' new latrines, St. Margaret's schools. Messrs. Ford & Slater, architects, Burslem:—

J. Grant	£297	W. Grant & Son	£250
C. M. Sambrooke....	282	H. Wardle	250
C. Smith	261	C. A. Foster	248
S. Wilton, Jun.	258	J. Jones, Silverdale*	210

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